Value Relevance of Profit or Loss and Comprehensive Income in the Slovak Republic

Thesis

Value relevance of profit or loss and comprehensive income in the Slovak Republic

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Abstract

This study investigates the relative and incremental value relevance of profit or loss (PL), other comprehensive income (OCI) and its components and comprehensive income (CI) in the Slovak Republic. We extend prior empirical evidence on CI value relevance by examining one of the recently transitioned markets of Central and Eastern Europe that has extensively adopted the International Financial Reporting Standards (IFRS). Previous empirical studies provide mixed results, which can be attributed partially to the use of as-if estimation technique to approximate CI/OCI figures. For that reason, this study adopts a comparative design in which we compare the value relevance between the companies following IFRS and companies following local accounting regulations on a sample of public Slovakian listed entities in the period from 2012 to 2014. We find evidence that PL is more value-relevant than CI in both groups, and that OCI provides value-relevant information, in addition to those already disclosed in PL and book value, only in the group of companies following Slovakian accounting regulations. Therefore, the results of this study suggest that mandating all Slovakian public listed entities to report comprehensive income does not enhance the usefulness of financial statements.

Preface

This dissertation is submitted for the degree of Master of Research at the Open University. The research described herein was conducted under the supervision of Doctor Carien van Mourik and Doctor Sardar Ahmad in the Department of Accounting and Finance, Open University, between October 2015 and September 2016.

This work is to the best of my knowledge original, except where references are made to previous literature. Neither this work, nor any substantially similar dissertation has been or is being submitted for any other degree, diploma or other qualification at any other university. This dissertation contains less than 17,000 words.

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1 Aims and objectives

This chapter serves as an introduction to the dissertation. The chapter succinctly presents research background and introduces the aims and objectives of this study. In the end, research questions are stipulated together with the rationale for this research. This chapter is divided into five sections, namely, research background, aim of the study, research objectives, research rationale, research contribution and research questions.

1.1 Research background

The Financial Accounting Standards Board (FASB) introduced the term comprehensive income in Concepts Statement No. 3 defined as 'the change in equity (net assets) of an entity during a period from transactions and other events and circumstances from non-owner sources' (FASB, 1980, p. 6). This income definition results from a desire to incorporate in one figure all non-owner changes in equity during a reporting period. Consequently, comprehensive income also includes unrealised gains and losses that result from changes in the market value that would otherwise bypass the statement of income and be reported as direct adjustment to equity, among others gains and losses arising from translating the financial statements of a foreign operation and gains and losses on re-measuring available-for-sale financial assets.

Despite the clear definition of comprehensive income, it was not until 1997 and the issuance of Statement of Financial Accounting Standard No. 130 (SFAS 130), when the reporting of comprehensive income became mandatory in the United States (US). In 2007, International Accounting Standards Board (IASB) issued a revision of International Accounting Standard No. 1 (IAS 1), in which IASB requires all entities to prepare a statement of comprehensive income for all annual periods beginning on or

after 1 January 2009. In this statement, companies report other comprehensive income (OCI) that once added to profit or loss (PL), yields to comprehensive income (CI).

1.2 Aim of this study

This study is motivated by two presumptions. First, that 'comprehensive income better measures firm performance because it includes all changes in the net assets of a firm during the reporting period' (AAA Financial Accounting Standards Committee, 1997, p. 122). Secondly, that the clear display of comprehensive income and its components 'make[s] it easier for users to understand and use that information in their analyses' (IASB, 2008, p. 61) because the users do not have to sort through voluminous notes and nonfinancial information to find that information.

Therefore, the aim of this study is to investigate the above claims that comprehensive income is a better measure of firm performance than profit or loss in the Slovak Republic (hereafter Slovakia) by testing whether CI or PL better summarises firm performance as reflected in the market values of equity.

1.3 Research objectives

To achieve the aim of this research, we stipulate the two objectives for this study. The first objective is to examine the relative value relevance of PL (formerly net income) and CI in Slovakia. The second objective is to evaluate the incremental value relevance of aggregate OCI and its individual components on the sample of public Slovakian listed entities.

'Value relevance of accounting information is one of the basic attributes of accounting quality, measured as the ability of financial statement information to capture or summarise information that affects share values' (Francis and Schipper, 1999, p. 327).

1.4 Research rationale

The existing literature on CI value relevance provides conflicting results (see Appendix A). The majority of research concentrates on Anglo-Saxon countries with well-traded and developed capital markets, and strongly investor-oriented accounting systems (Kanagaretnam et al., 2009; Chambers et al., 2007; Biddle and Choi, 2006; O'Hanlon and Pope, 1999; Dhaliwal et al., 1999; Cheng et al., 1993).

There are three possible reasons for observing inconsistent results on CI value relevance. First, in the beginning of the debate on CI usefulness, researchers conducted their investigations using *as-if* data (Biddle and Choi, 2006; Cheng et al., 1993; Dhaliwal et al., 1999; O'Hanlon and Pope, 1999; Goncharov and Hodgson, 2011), which is data that were either manually calculated using actual figures reported in the financial statements or collected from various notes included in the annual report. More recently, research has shifted towards using the actual *as-reported* data (Chambers et al., 2007; Kanagaretnam et al., 2009; Mechelli and Cimini, 2014), as they became widely available due to its mandatory presentation in the primary financial statements.

The studies by Cheng et al. (1993) and Dhaliwal et al. (1999) both use *as-if* data for CI measurement. Cheng et al. (1993) examine the usefulness of three income definitions (operating income, net income and CI) in explaining the abnormal returns for a sample of 922 US firms between 1972 and 1989. On the other hand, Dhaliwal et al. (1999) examine how strongly net income and CI is associated with returns in the years 1994 and 1995. Both studies provide the same conclusion, that more traditional income measure – net income clearly dominates CI. Contrary to what Cheng et al. (1993) and Dhaliwal et al. (1999) found is positioned the study by Biddle and Choi (2006) that uses *as-if* estimation technique. Biddle and Choi (2006) evaluate sixteen different definitions of income in terms of information content, predictive ability and executive

compensation using the sample of US companies for the period from 1994 to 1998. They report that CI dominates net income in explaining abnormal returns.

Secondly, researchers differ in a way they operationalise measurement of the concept of value relevance. Some of the research concluded their findings based on the results of information and valuation perspective (Cheng et al., 1993; Dhaliwal et al., 1999; Mecheli and Cimini, 2014), whereas others complement these by examining the predictive ability of CI or otherwise (Biddle and Choi, 2006; Goncharov and Hodgson, 2011). Lastly, an increase in CI value relevance reported in recent studies (Casta *et al.* 2007, Fasan *et al.* 2011) can be explained by the proposition 'suggesting that investors become more familiar with the predominant reporting location for CI (Chambers et al., 2007, p. 560).'

Nevertheless, there remains limited evidence on CI value relevance from the countries with less developed capital markets and economies in transition. Moreover, the studies from the European Union (EU) examine the value relevance on the sample of companies listed in several different EU countries that often have different accounting institutions and thus follow different accounting regulations. (Mechelli and Cimini, 2014; Fasan et al., 2014; Goncharov and Hodgson, 2011; Casta et al., 2008). Beaver (2002, p. 460) states that value relevance research on accounting information requires in-depth knowledge of accounting institutions and accounting standards. This statement supports research based on individual case-country study rather than large comparative studies in which the researcher has limited understanding of the accounting institutions and standards of all the countries included in the sample. Although the study by Fasan et al. (2014) incorporates three post-communist countries[1] in the sample of 19 EU countries, it performs the analysis dealing with the sample as a homogeneous entity. In

[1] Czech Republic, Hungary and Poland

other words, Fasan et al. (2014) ignores the effect of substantial variation in markets, accounting rules and business culture, particularly between well-developed and recently transitioned markets in the EU.

The choice of Slovakia is motivated by the fact that Slovakia additionally adopted IFRS, in both consolidated and individual accounts for all public interest entities. Therefore, our findings will provide evidence on whether CI better reflects performance of the company and thus justifies the choice of Slovakia for more extensive IFRS adoption.

1.5 Research contribution and research questions

This study builds upon the research by Goncharov and Hodgson (2011) and contributes to the existing literature in the following two ways. Firstly, it introduces an understudied set of public EU entities listed on the Bratislava Stock Exchange in Slovakia. And secondly, it provides a comparison on value relevance of PL, OCI and its components and CI between the public Slovakian entities using IFRS versus Slovakian accounting regulations (SAR) to prepare consolidated financial statements.

The research questions of this study are as follows:

1 *Does profit (loss) or comprehensive income or the combination of profit (loss) and the element of other comprehensive income reported by Slovakian listed companies provide information that is more value-relevant?*

2 *Do individual items[2] of other comprehensive income add the incremental value-relevant information when added to profit (loss)? If so, which items?*

3 *Is there any difference in value relevance of profit (loss), elements of other comprehensive income and comprehensive income between the firms using IFRS standards and firms using Slovakian accounting regulations to prepare consolidated financial statements?*

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[2] According to IAS 1, the components of OCI include:
(a) changes in revaluation surplus;
(b) actuarial gains and losses on defined benefit plans;
(c) gains and losses arising from translating the financial statements of a foreign operation;
(d) gains and losses on re-measuring available-for-sale financial assets;
(e) the effective portion of gains and losses on hedging instruments in a cash flow hedge.

2 Literature review

The purpose of this chapter is to review the extant literature on CI value relevance, discuss the theoretical concepts and identify the research gap currently present in the literature. This chapter is divided into six sections. Section 2.1 discusses the theoretical perspectives on CI value relevance research. Section 2.2 reviews the existing literature from the US and the EU. Sections 2.3, 2.4 and 2.5 connect the literature with the Slovakian accounting environment and Section 2.6 outlines the hypotheses.

2.1 Theoretical concepts of comprehensive income value relevance research

2.1.1 Clean versus dirty surplus accounting practice

The impetus for the value relevance research on CI emerged within the long-standing debate over determination of income. At the centre of this debate are two schools of thought: (1) current-operating view (dirty surplus accounting), and (2) all-inclusive view (clean surplus accounting). Clean surplus accounting focuses on reporting all changes in net assets in the statement of income and thus generates a CI amount. In contrast, dirty surplus accounting allows for unrealised components of income to bypass the statement of income and to report an accounting amount (net income), which, according to Black (1993), has a better predictive power.

Brief and Peasnell (1996, p. 11) suggest that the debate over dirty surplus accounting and clean surplus accounting reflects two different objectives of financial statements: (1) predictive ability, and (2) reporting of 'the facts'. Proponents of dirty surplus accounting argue that CI contains a number of transitory and non-recurring items contingent on future events (Goncharov and Hodgson 2011, p. 31). These items introduce a noise and uncertainty into reported numbers and obstruct decision-making

due to the fact that users must disentangle components of income that are temporary or irrelevant (Brief and Peasnell, 1996). Therefore, 'by eliminating transitory and non-operating flows, the predictive ability of reported earnings, and its consequent usefulness for equity valuation purposes are enhanced' (O'Hanlon and Pope, 1999, p. 460).

On the other hand, the Association for Investment Management and Research (AIMR) (1993, p. 64) states that 'financial statement users need in one place all the information regarding a company's economic activity, which they may sort out to suit their own purposes'. AIMR (1993, p. 88) further argues that great effort is required by analysts to locate and assess all components of income that may have an influence on their forecasts of the firm's valuation. In addition, the advocates of clean surplus accounting argue that the process of recycling becomes an issue in dirty surplus practice, 'whereby dirty surplus flows initially booked to equity are, after realisation, subsequently rebooked to equity through the income statement' (Goncharov and Hodgson, 2011, p. 30). Therefore, immediate recognition and reporting under clean surplus accounting would transparently present income flows in one statement and avoid the possibility of double counting (AIMR, 1993).

2.1.2 Value relevance and decision usefulness of accounting information

The theory of value relevance is closely linked to the concept of decision usefulness of accounting information. According to IASB Conceptual Framework for Financial Reporting (2010) (hereafter the Framework), financial information is regarded as decision useful if it qualifies as being relevant and faithfully represented. Relevant financial information is capable of making a difference in the decisions made by users by demonstrating its predictive value, confirmatory value or both.

'Financial information has predictive value if it can be used as an input to processes employed by users to predict future outcomes.' (Cf. IASB 2010, QC8)

'Financial information has confirmatory value if it provides feedback about previous evaluations.' (Cf. IASB 2010, QC9)

For financial information to be represented in a faithful manner, it should be complete, neutral and free from error.[3] The Framework further specifies four enhancing qualitative characteristics: comparability, verifiability, timeliness, and understandability.[4] The information provided in financial statements is more useful if it is comparable to similar information of the business entity for previous periods, as well as comparable to information provided by different entities.[5] Verifiable information enables the users directly or indirectly to verify its authenticity.[6] Financial information is timely if it has an impact on the decision-making based in the point of time it is provided.[7] Understandability refers to users being able to understand the essentials of the clearly and concisely presented information, having reasonable knowledge of business and economic activities.[8]

However, in the academic literature, 'an accounting amount is defined as value-relevant if it has a predicted association with equity market values' (Barth et al., 2001, p. 79). In other words, researchers define value relevance based on the correlation between accounting amount and the market value of equity. Yet this definition of value relevance is not a stated criterion in the Framework; it rather represents one approach to

[3] Cf. IASB (2010), QC12.
[4] Cf. IASB (2010), QC4.
[5] Cf. IASB (2010), QC20 – 25.
[6] Cf. IASB (2010), QC26 – 28.
[7] Cf. IASB (2010), QC29.
[8] Cf. IASB (2010), QC30 – 32.

operationalisation of the IASB criteria of relevance and faithful representation. Therefore, the variation between the definition of value relevance in the Framework and academic research suggests that 'accounting information can be value-relevant [according to association tests], but not decision useful [based on the IASB criteria] if it is superseded by more timely information' (Barth et al., 2001, p. 80).

2.1.3 Market efficiency

The concept of market efficiency serves as an important theoretical basis for the empirical analysis carried out in CI value relevance research. The proposition of a certain level of market efficiency is the basis for the empirical analysis. Moreover, the informational efficiency of capital market is a requirement for reliability of value relevance tests, and is also of prime importance in verifying the development of financial markets in a country that has transformed from a centrally-planned economy to a free market system (Dobija and Klimczak, 2010, p. 366). According to the efficient market hypothesis, share prices fully reflect all available capital market information (Fama, 1991, p. 1575). Most studies on CI value relevance are silent about market efficiency and appear to make inferences based on the assumption that the stock market is efficient in the semi-strong form (Aboody et al., 2002, p. 966). However, the empirical evidence suggests that the market may not be completely efficient in processing the public information. This is often stated as a limitation to the inferences that can be made from the value relevance analyses.

Although the research into market efficiency of emerging economies provides evidence that the degree of market efficiency is country-specific (Dobija and Klimczak, 2010, p. 366), it is not the objective of this study to perform the tests of market efficiency in Slovakia. In our study, it is assumed that semi-strong market efficiency holds, and that all publicly available information is incorporated in the market values.

The following section reviews the existing literature on CI value relevance in the US and the EU.

2.2 Literature on the value relevance of comprehensive income

The existing research addressing the CI value relevance adopts an investor perspective, in which a valuation approach is employed to examine the degree of value relevance. As investors are primarily interested in information that facilitates the assessment of the value of a firm, the value-relevant accounting information becomes a key input in an informed investment choice (Barth, 2000, p. 10). Consequently, these studies analyse the statistical relationship between the market data and different accounting measures to provide evidence on the usefulness of accounting amounts for investors' decision-making processes, for the standard setters, the users of the financial statements and the research community. However, the studies carried out so far have provided mixed results.

2.2.1 CI value relevance studies in the US

The study by Cheng et al. (1993) examines the usefulness of three income definitions – operating income, net income and CI, in explaining the abnormal returns on a sample of 922 US firms between 1972 and 1989. This study is motivated by the confusion regarding the definition of earnings. At the time, under existing US accounting rules, earnings was defined as net income that in addition to operating income also included non-operating gains and losses, extraordinary items and items associated with discontinued operations. Although CI was not a reporting requirement, it had started to gain recognition predominantly in response to AIMR Report (1993). Due to the lack of consensus as to how much significance should be attached to gains/losses included in net income but not in operating income, and because investors typically redefine

earnings based on net income by excluding extraordinary items, Cheng et al. (1993) hypothesize that operating income should be more useful than net income in explaining residual security returns.

By testing the relative and incremental information content[9] of the three earnings definitions, Cheng et al. (1993) conclude that net income is the most useful definition in explaining residual returns, followed by operating income and CI. Cheng et al. (1993, p. 202) suggest that 'items between net income and operating income are found to have the incremental information content because they have been part of net income for quite some time [and] if CI is ever adopted, it too would appear relevant to investors over time'.

The following study by Dhaliwal et al. (1999) is motivated by the issuance of Statement of Financial Accounting Standard No. 130 (SFAS 130) in 1997 which requires reporting of CI in one of the primary financial statements: (1) a statement of income, (2) a separate statement of comprehensive income or (3) a statement of changes in equity. SFAS 130 defines CI as net income adjusted for items of OCI[10].

In addition to net income and CI[11] evaluated by Cheng et al. (1993), Dhaliwal et al. (1999) assess how strongly comprehensive income as defined by SFAS 130 (CI_{130}) is associated with returns in the years 1994 and 1995. They also extend the value relevance analysis by introducing a valuation perspective in which the association between stock prices and earnings is examined. The findings provide no clear evidence that both CI_{130} and CI are more strongly associated with stock returns and stock prices than net income. In the incremental value relevance analysis, Dhaliwal et al. (1999, p.

[9] Information content represents the statistical association between accounting amounts and equity returns.

[10] At the time, under SFAS 130, the three items included in OCI were: (1) change in unrealised gains and losses on marketable securities, (2) change in the cumulative foreign currency translation adjustment, and (3) change in additional minimum pension liability in excess of unrecognised prior service costs.

[11] Cheng et al. (1993) examine CI defined in accordance with clean surplus accounting practice, as the change in net assets during the reporting period from non-owner sources.

64) examine the value relevance of OCI individual items, and provide evidence that 'the marketable securities adjustment is the only component that improves the association between net income and returns'.

The results have the following implications. First, they do not support the claim that income measured on a comprehensive basis is a better measure of firm performance than net income. Secondly, with the exception of the marketable securities adjustment, the components of OCI do not provide value-relevant information and only add noise into CI figure. These results suggest that FASB should re-examine the requirement to include these components in CI.

A key characteristic of the research design in Dhaliwal et al. (1999) is the use of as-if data for CI and OCI items. The as-if estimation technique constructs an ex-ante measure of CI and OCI prior to the implementation of relevant standard prescribing explicit CI/OCI presentation.

The following study by Chambers et al. (2007) is motivated by the inconsistency between the findings in Dhaliwal et al. (1999) and the presumption that OCI should be valued by investors based on the valuation theory. Chambers et al. (2007) hypothesize that because OCI elements consist of transitory income, according to the theory developed by Ohlson (1999), they are a component of book value and as such affect value dollar-for-dollar. In other words, by causing a direct change in shareholder's wealth, one dollar of OCI should result in one dollar of return. Thus, Chambers et al. (2007) predict that OCI should be associated with market value on a dollar-for-dollar basis only. Chambers et al. (2007, p. 558) state that opposing results in previous research are affected by the use of data from the period prior to implementation of CI reporting that may be subject of significant measurement error. Therefore, the research

design in Chambers et al. (2007) relies on as-reported data defined as data explicitly stated and hand-collected from audited financial statements.

Chambers et al. (2007) examine the valuation role of OCI on the sample S&P 500 companies in two time periods: (1) before the adoption of SFAS 130 (1994-1997), and (2) after the adoption of SFAS 130 (1998-2003). They find that OCI is priced on a dollar-for-dollar basis in the post-SFAS period. In the analysis of individual OCI elements, they find that unrealised gains and losses on marketable securities, and foreign currency translation adjustments are also priced positively. These results support the assumption that the as-if technique could introduce an estimation error into CI/OCI numbers.

In addition, Chambers et al. (2007) assess the effect of OCI reporting location on pricing. Prior empirical evidence suggests that clear reporting of OCI in the statement of income improves pricing decisions of the financial statements users (Maines and McDaniel, 2000; Hirst and Hopkins, 1998). However, Chambers et al. (2007) find that investors pay greater attention to OCI information reported in the statement of changes in equity, rather than a statement of income[12]. They suggest that this could be attributed to investors being more familiar with the predominant reporting location in the period prior to the adoption of SFAS 130[13] (Chambers et al., 2007, p. 558).

2.2.2 CI value relevance studies in the EU

In response to the mandatory reporting of CI in the US, O'Hanlon and Pope (1999) examine the value relevance of dirty surplus accounting flows under UK GAAP (generally accepted accounting principles) on sample of 158 UK companies over the

[12] SFAS 130 states a preference for OCI reporting in a statement of income.
[13] Prior to adoption of SFAS 130, the elements of OCI were reported in the statement of changes in equity.

20-year period 1972 to 1992. This study is motivated by misgivings about dirty surplus accounting practice. Since dirty surplus flows are reported as direct adjustment in the shareholders' equity, 'they may not always be reported as readily identifiable flows in published financial statements' (O'Hanlon and Pope, 1999, p. 460) and thus reduce transparency of reported earnings (Reither and Smith, 1996, p. 19). O'Hanlon and Pope (1999) test the explanatory power of ordinary profit and four dirty surplus items (goodwill write-offs, revaluation adjustments, foreign currency translations and extraordinary items) in terms of cumulative stock returns over the short-term (1-, 2- and 5-year) and long-term (10- and 20-year) intervals. They provide evidence that ordinary profit reported under dirty surplus UK GAAP is value-relevant on the basis of both short- and long-term intervals. However, with the exception of extraordinary items, the aggregate UK dirty surplus does not include value-relevant information that would improve statistical association between stock returns and ordinary profit. At the time, these results allayed 'concerns that, by allowing value-relevant flows to bypass reported earnings, dirty surplus accounting practices promote undesirable creative accounting activity by UK firms' (O'Hanlon and Pope, 1999, p. 459).

Since January 2005, all European listed entities have been required to prepare consolidated financial statements in accordance with IFRS standards.[14] In 2007, IASB issued a revision of International Accounting Standard No. 1 (IAS 1) requiring business entities to present CI either in a separate statement entitled Statement of comprehensive income or as an extension of existing Statement of income for all annual periods beginning on or after 1 January 2009. Following these two major steps towards harmonisation of financial statements and reporting CI in the EU, research has shifted to

[14] The EU Regulation No. 1606/2002 of the European Parliament and of the Council of 19 July 2002 established that all publicly traded community companies would have to prepare their consolidated financial statements in accordance with IFRS, at the latest by 2005.

examination of CI value relevance using a broader sample of EU countries following the IFRS standards.

The study by Goncharov and Hodgson (2011) is primarily motivated by the IASB discussion paper, Preliminary Views on Financial Statement Presentation (IASB, 2008), in which several issues regarding income determinations are raised. First, should income be presented as a single aggregated figure? Secondly, should income conceptually include both realised and unrealised changes in fair value? Thirdly, how should CI items be allocated to enhance the prediction of future cash flows?

Goncharov and Hodgson (2011, p. 55) investigate the usefulness of net income, CI and three items of OCI[15] 'by assessing information, valuation and prediction effects on the general investors, as well as the impact on financial analysts' forecasts and debt-holders' on a sample of 16 EU countries from 1991 to 2005. The time period selected does not allow a research design to use as-reported numbers and thus Goncharov and Hodgson (2011) assess value relevance based on as-if measures for CI and OCI.

According to information and valuation perspective using pooled analysis, reporting of one aggregate CI figure does provide greater value relevance. However, if aggregate OCI is separately added to net income, it improves the level of value relevance. In information perspective (association between earnings and share returns), this can be attributed to unrealised gains and losses on securities held-for-sale, whereas in valuation perspective (association between earnings and share prices), this cannot be traced to any individual OCI component. The power of net income to predict future cash flows is superior to that of CI, which suggests that 'net income is a better measure of a firm's performance from a general investor's perspective' (Goncharov and Hodgson, 2011, p. 44).

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[15] The three components of OCI include: (1) unrealized held-for-sale security gains and losses, (2) change in foreign currency translation adjustments and (3) change in revaluation reserve.

Because accounting rules and business culture substantially vary across EU countries, Goncharov and Hodgson (2011) further analyses whether CI, along with its components, is more useful in some countries than others. They confirm that net income is more value-relevant than CI in the majority of EU countries (11 out of 16). Goncharov and Hodgson (2011) further extend the analysis and assess the effect of financial reporting frameworks (IFRS, local GAAP and US GAAP) on the level of value relevance. They provide evidence that incremental OCI is value-relevant but CI is not in IFRS and local GAAP subsamples. However, findings for subsample of US GAAP are consistent with the results of Dhaliwal et al. (1999).

In conclusion, Goncharov and Hodgson (2011, p. 27) indicate that 'results consistently support the retention of net income as a general decision-relevant metric'. However, results suggest that OCI elements should be presented in disaggregated manner based on unrealised nature of gains and losses. 'This approach supports the boards' reasoning that aims for an approach that will allow users to educate themselves and become familiar with the notion of aggregated CI, while still retaining the touchstone of net income' (Goncharov and Hodgson, 2011, p. 56).

A recent study by Mechelli and Cimini (2014) investigated the relative and the incremental value relevance of net income, OCI and CI on the sample of 15 EU countries after the mandatory adoption of IFRS standards. Mechelli and Cimini (2014) hypothesize that net income should be more value-relevant than CI due to the nature of the OCI components, which are primarily gains and losses arising from a random walk. However, they suggest that consistent with Ohlson's (1999) analysis of transitory earnings, OCI elements should be value-relevant when added separately to net income. They confirm that net income is relatively more value-relevant than CI in information and valuation analysis, and that aggregate OCI provides value-relevant information once added to net income.

In addition, Mechelli and Cimini (2014) examine the change in OCI value relevance by comparing two periods: (1) pre-IAS 1-revised period (2006-2008), and (2) post-IAS 1-revised period (2009-2011)[16]. This analysis provides evidence on whether the location of OCI reporting changed its value relevance. They state that since the IAS 1 (revised) only changed the OCI reporting location and not the information already recognised in accounting amounts, 'it is reasonable to predict that the mandatory issuance of a statement of comprehensive income should not have significantly affected the value relevance of CI and OCI' (Mechelli and Cimini, 2014, p. 65). The results confirm that the change in reporting location did not affect the OCI/CI value relevance.

In a final empirical analysis, Mechelli and Cimini (2014) test whether OCI value relevance differs across EU countries. Nobes and Parker (2010) suggest that both the scope of IFRS and business motivations can cause different accounting practices amongst EU countries. Based on this assumption, companies select the accounting options most suitable for their goals. Thus, Mechelli and Cimini (2014) conduct the analysis based on the countries' characteristics, such as the source of funds (equity versus credits) and the legal system. The results provide evidence that OCI is more value-relevant in countries with strong-equity characteristics and high investors' legal protection. Mechelli and Cimini (2014, p. 84) state that entities in strong-equity countries 'have the need to disclose relevant information to attract funds available on the market'.

In the following sections, we will discuss the relevant topics on CI value relevance research in Slovakia. These include IFRS compliance, accounting environment and comparison of IFRS and Slovakian Accounting Regulations (SAR).

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[16] Albeit the selection of post-IAS 1 revised period allowed for the collection of actual data, Mechelli and Cimini (2014) compute OCI in accordance with Ohlson's (1999) clean surplus formula. Therefore, this study is classified as as-if investigation of OCI value relevance.

2.3 IFRS compliance in Slovakia

Since January 2005, all companies with their securities traded at regulated EU markets are required to prepare their consolidated financial statements according to IFRS. Slovakia used the option under EU Regulation and additionally requires all non-publicly traded companies to adopt IFRS at the consolidated level, and all public interest entities[17] to adopt IFRS for both consolidated and individual accounts. Guggiola (2010, p.100) suggests that the extensive IFRS adoption results from 'the existence of scarcely sophisticated local GAAP and the need for improving the quality of financial data' largely apparent amongst former communist countries. Despite this requirement, we observe that the majority of Slovakian listed entities do not follow this regulation, and continue to use local GAAP when preparing consolidated financial statements or they simply do not publish consolidated financial statements. The following paragraphs discuss potential reasons for this observation.

Following the peaceful dissolution of Czechoslovakia in 1993, the necessity for a new accounting act became evident. The first Accounting Act had largely been influenced by German and French accounting models, as they both have a basis in standardised chart of accounts (also previously used in Czechoslovakia during communist era), and maintain a close link between accounting and taxation. In addition, these accounting systems are also more creditor- than investor-oriented due to the traditional structure of their financial markets (De Beelde et al., 2001, p. 349). Creditor-oriented accounting systems better serve the interests of creditors and insiders of the company, rather providing relevant information to potential investors.

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[17] Public interest entities are defined as banks and branches of foreign banks; export-import Bank of Slovak Republic; insurance companies and branches of foreign insurance companies except health insurance companies; the Stock Exchange; Office of Slovak Auditors; the Slovak Railroads, reinsurance companies; asset management companies; and those companies that meet at least two of the following criteria in two consecutive years: total assets more than €165,969,594; net turnover more than €165,969,594; and average number of employees more than 2,000.

Such model was quite appealing because of the importance of state-controlled industries in Slovakia and rather non-existent public capital market at the time. This model served the purpose, as trade credits and bank loan financing had been almost the exclusive source of funds for local corporates. Nowadays, despite increasing internationalisation of capital markets and globalisation of business activities, foreign direct investments in Slovakia remain in negative figures (UNCTAD, 2016)[18] and the majority of listed entities are characterised by heavily concentrated shareholdings with owners often involved in management. Moreover, the market capitalisation is less than 5% of Slovak GDP, compared to almost 20% in the Czech Republic and almost 40% in Poland (World Bank, 2016). In addition, the coexistence of two different accounting systems (Slovak GAAP and IFRS) reduces the ability to compare the performance of companies among different countries and within each country, as well as between listed and non-listed entities. This results in 'the inefficiency of a status quo in which listed companies must comply both with IFRS at consolidated level, and local GAAP when preparing individual accounts' (Guggiola, 2010, p. 102).

Consequently, the costs of preparing financial statements in two different accounting systems, the governmental fiscal reliance on accounting figures prepared under Slovak GAAP, and the traits of Slovakian capital market could have resulted in a situation where management does not feel the necessity to prepare IFRS consolidated financial statements. Although European Securities and Markets Authority ensures that the IFRS legal enforcement is in place at a national level by designating a competent authority[19], the IFRS non-compliance does not only manifest itself in Slovakia. The study by Pownall and Wieczynska (2012) find that the incidence of non-IFRS consolidated

[18] According to UNCTAD (2016) Slovakia reported foreign inward flow as -604 in 2013 and -311 in 2014 in million USD.

[19] In Slovakia, it is the National Bank of Slovakia that is responsible for IFRS enforcement in public listed entities.

financial statements was still in excess of 42% in 2009 using the sample of EU listed entities.

2.4 Comparison of IFRS and the Slovakian Accounting Regulations (SAR)

Table 2.1 summarises the most important differences between IFRS and SAR.

The recognition and measurement regulations for the assets, construction contracts and leasing predict greater value relevance under IFRS. Hellström (2006, p. 333) suggests that the rule of 'substance over form' applied in IFRS accounting 'can generally be assumed to promote value relevance since accounting under such circumstances better reflects the underlying economic events and thus give more appropriate information about the company's activities'.

Although we predict the value relevance of accounting information to be lower under SAR than IFRS, the improvements in the institutional and accounting environment could increase the value relevance over time.

Table 2.1: Main differences between IFRS and SAR

Item	*IFRS*	*SAR*
The Framework	IASB uses the Conceptual Framework as an aid to draft new or revised IFRS.	Unlike IFRS, no such document exists in SAR. The key definitions and other principles are included in the Accounting Act.
Substance over form	The Framework establishes a general requirement to account for transactions in accordance with substance rather than its legal form.	Unlike IFRS, SAR includes a requirement to account for legal form of the transactions.
Components of the financial statements	The primary financial statements include (IAS 1.10): - Statement of income; - Statement of other comprehensive income; - Statement of changes in equity; - Statement of financial position; - Statement of cash flows; - Explanatory notes to the accounts.	According to Article 17(3) of the Act on Accounting, the components of the financial statements are: - Statement of income; - Statement of financial position; - Notes.

Item	**IFRS**	**SAR**
Assets	An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity (Cf. IASB 2010 4.4)	Unlike IFRS, there is no control criterion incorporated into the definition of asset.
Finance lease	Finance lease is a lease that transfers substantially all the risks and rewards of ownership of an asset.	Unlike IFRS, the main criteria of the definition of a finance lease include property, plant and equipment, right to purchase and the period of the lease.
Intangible assets	An intangible asset is an identifiable non-monetary asset without physical substance (IAS 38.8).	Non-current intangible assets are those asset items with a value of more than 2,400 EUR and a useful life of more than one year (Article 13 (2) of the Accounting Procedures).
Construction contracts	Contract revenue and contract costs associated with the construction contract are recognised as revenue and expenses respectively by reference to the stage of completion of the contract activity at the balance sheet date (IAS 11.22).	Contract revenues and contract costs are recognised on the date of contract conclusion (Article 30 (7) of the Accounting Procedures).

Item	**IFRS**	**SAR**
Goodwill	Goodwill represents future economic benefits arising from assets that are not capable of being identified individually and recognised separately (IAS 38).	Goodwill (or negative goodwill) is the difference between the acquisition cost and the acquirer's interest in the fair value of the identifiable assets and liabilities acquired on the date of acquisition. Negative goodwill is shown on the asset side of the balance sheet with a negative sign (Article 37 (11) of the Accounting Procedures).

Source: Compiled by the author using IFRS and SAR standards.

2.5 Value relevance of accounting information in Slovakia

Fasan et al. (2014) conducted a research on value relevance of OCI across 15 EU countries, including three post-communist countries[20] for the time period 1995-2010. They examine the change in OCI value relevance as a result of two events: (1) the adoption of IFRS in the EU in 2005, and (2) the revision of IAS 1 effective from 2009. Fasan et al. (2014, p. 20) hypothesize that the IFRS adoption in the EU resulted in greater OCI value relevance since IFRS standards fulfil the investors' expectation of improved disclosure quality. They also propose that OCI value relevance increased following the revision of IAS 1 based on the results of experimental research by Hirst and Hopkins (1998) and Maines and McDaniel (2000). These studies provide evidence that the reporting location of accounting measures plays a role in investors' decision-making processes. According to Hirst and Hopkins (1998, p. 57) 'research in psychology suggests that information will not be used unless it is both available and readily processable (clear)'.

Fasan et al. (2014) confirm that, as a consequence of both events, the OCI value relevance increased; however, there are some major limitations to the study. First, Fasan et al. (2014, p. 30 – 31) indicate 'the probable presence of a strong downward bias during our sample time period [that] stem[s] from the global financial crisis and the European sovereign debt crisis that affected the European stock markets in the 2009-2011 period'. Secondly, the research design relies on the Ohlson clean surplus formula to estimate the OCI data, which confirms that this is an as-if investigation on OCI value relevance. Thirdly, Fasan et al. (2014, p. 22) rely only on the association between returns and earnings to guide the evaluation of OCI value relevance. Lastly, they do not

[20] Czech Republic, Poland and Hungary

perform the country-level analysis and thus it is impossible to draw any conclusion on OCI value relevance for individual EU countries.

As stated in section 2.1.3, 'the informational efficiency of financial markets is a requirement for reliability of value relevance tests' (Dobija and Klimczak, 2010, p. 366). However, transition economies exhibit low value relevance because of the poor quality of their accounting information. As the transition process in Slovakia was completed by 2000, an increase in both the quality of accounting information and its value relevance over time can be expected. The study by Hellström (2006) investigates the validity of the value relevance methodology in the transitional economy of the Czech Republic during the period 1994 to 2001. The objective of the study is to compare the actual results and predicted results of the value relevance of accounting information based on two key assumptions: (1) the value relevance increases over time as a result of the progress in transition, and (2) the value relevance of accounting information is lower in a transitional economy than in a well-developed market economy (Hellström, 2006, p. 325). The results provide supportive evidence of the validity of the value relevance methodology in the transitional economy. According to Hellström (2006, p. 346), 'the critique of the appropriateness of the value relevance research in less-developed capital markets does not seem to be completely justified'.

Value relevance researchers have become increasingly aware that the value relevance of accounting information is not based only on accounting regulation but it is also impacted by a number of factors external to the accounting environment. Hellström (2006, p. 329) specify five factors that influence a degree of and changes in value relevance of accounting information: (1) development of accounting regulation, (2) control mechanisms, (3) business climate, (4) internationalisation and business cycle, and (5) economic development and industry structure. The following two sections discuss these aspects in Slovakia.

2.5.1 Development of accounting regulation

Slovakia began its economic transition in 1989. Over the past 30 years, Slovakia carried out privatisation programmes, established a stock market, and joined European Union. However, rapid economic transition provided little time for accounting regulation to evolve from initial fiscal reporting function to a relevant source of information for investors. The first Accounting Act effective in Slovakia[21] was based on the principle of providing information to company managers to enable them to make financial decisions (De Beelde et al., 2001, p. 349). This Accounting Act maintained a close link between accounting and taxation.

In order to join the EU, Slovakia was obliged to implement a number of European directives[22]. The Securities Act 2001[23] required all listed entities to present annual financial statements in accordance with IFRS in addition to the requirement on statutory financial reporting based on local accounting rules. However, as there was no enforcement mechanism in place at that time, listed companies generally ignored this requirement and followed the accounting rules set by the Ministry of Finance (Białek-Jaworska and Tušan, 2014, p. 47). As the World Bank Report (2001, p. 2) states, 'it appears from the legislative requirements that the main purpose of accounting and financial reporting [in Slovakia] is to facilitate computation of taxable profit rather than to meet the information needs of investment decision makers and various other stakeholders.'

The focus of the new Accounting Act of 2002[24] was the international harmonisation of accounting as a requirement for global economic development. The new aspects that

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[21] Act 563/1991 of Accounting.
[22] Slovakia adopted EU directives in two stages: (1) the Fourth and Eighth Directive by December 1999, and (2) Seventh directive by June 2000.
[23] Act on Securities and Investment Services 566/2001.
[24] The Accounting Act 431/2002 came into force on 1 January 2003.

were introduced included true and fair override, fair valuation, derivative instruments and hedge accounting. The following integration of IFRS into the accounting legislation allowed comparable accounting information for applying sound economic decisions.

2.6 Hypotheses development

Goncharov and Hodgson (2011) and Mechelli and Cimini (2014) provide evidence that net income, is more value-relevant than CI. Furthermore, Mechelli and Cimini (2014) find that net income is significantly more value-relevant in countries with low investors' legal protection and low equity financing. In addition, Goncharov and Hodgson (2011) provide evidence that net income is significantly more value-relevant in a subsample of companies following EU-country-specific GAAP or IFRS. These findings support the hypotheses that PL should be more value-relevant than CI in both groups of companies, following IFRS and SAR.

Therefore, we propose the following hypotheses:

Hypothesis 1: In financial statements of Slovakian listed entities prepared according to IFRS, profit or loss should be more value-relevant than comprehensive income.

Hypothesis 2: In financial statements of Slovakian listed entities prepared according to SAR, profit or loss should be more value-relevant than comprehensive income.

Goncharov and Hodgson (2011) and Fasan et al. (2014) provide evidence that aggregate OCI provides value-relevant information when added separately to net income. As both of these studies use as-if numbers to examine the OCI value relevance, these findings support the assumption that OCI not reported explicitly in the statement of comprehensive income is value-relevant when added to net income.

Therefore, we propose the following hypothesis:

Hypothesis 3: The OCI recognised in financial statements of Slovakian listed entities, prepared according to SAR, provides value-relevant information in addition to those disclosed in profit or loss and book value.

In addition, Mechelli and Cimini (2014) compare the OCI value relevance in pre- and post-IAS 1-revised period, and find that the value relevance increased as a result of OCI reporting in the statement of comprehensive income. This result supports the assumption that aggregate OCI reported explicitly in the statement of comprehensive income provides additional value-relevant information.

Therefore, we propose the following hypothesis:

Hypothesis 4: The OCI recognised in financial statements of Slovakian listed entities, prepared according to IFRS, provides value-relevant information in addition to those disclosed in profit or loss and book value.

3 Methods of data collection

The purpose of this chapter is to describe and justify the methodology chosen to answer the research questions, provide rationale for the data selected, explain the issues deriving from the data collection technique, and describe the data sources.

3.1 Ontology and epistemology underlying this study

Merton (1967, p. 140) defines methodology as 'the logic of scientific procedure'. This logic encompasses the philosophical assumptions about the phenomena examined and about the basis on which and the way in which the knowledge claims are supported.

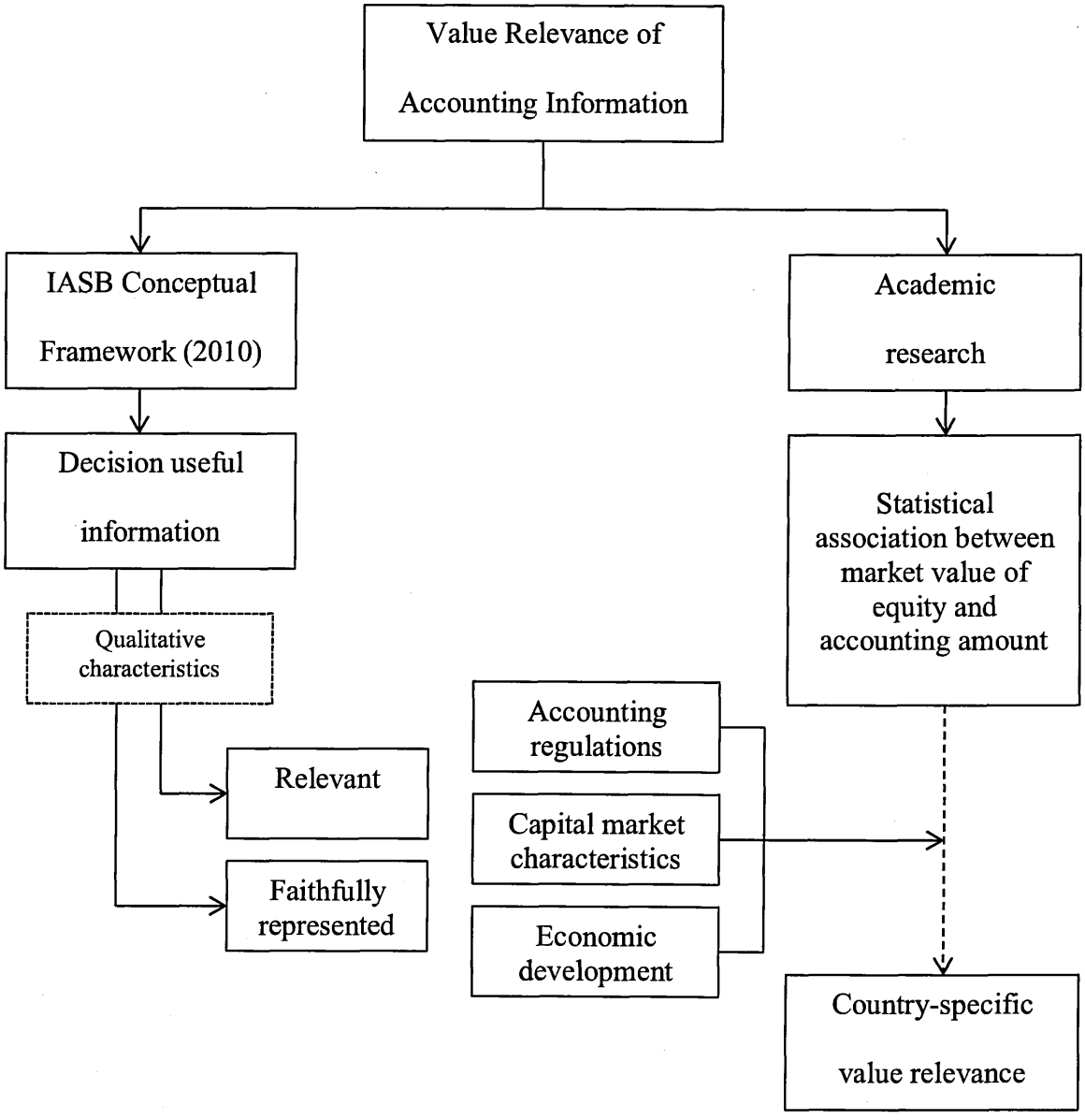
According to Easterby-Smith et al. (2002, p. 60), there are two main philosophical traditions in business and management research: positivism and social constructivism. The key difference between the two is embedded in the way in which the social world is viewed. The positivist approach assumes that the social world exists externally and its properties should be measured through objective methods, whilst the idea of social constructionism is that the social world is not external, reality is socially constructed and given meaning by people (Easterby-Smith et al., 2002, p. 63). A positivist research 'claims to provide reliable and empirically sustainable answers to questions that policy-makers regard to be important' (Ryan et al., 2009, p. 8). In contrast, social constructionism emphasizes 'interpretation' rather than 'prediction' and 'no appeal is made to the use of statistical or other formal methods' (Ryan et al., 2009, p. 8).

This study is based on the positivist approach, which is the mainstream research methodology in the field of accounting and finance. By adopting a positivist philosophy to answer the research questions, the researcher assumes that social reality exists as meaningful entities independent of consciousness and experience, and that a scientific approach can attain the objective truth and meaning about these entities. Moreover, by

adopting a positivist stance, the researcher maintains a neutral position so that the facts can be discovered independently of people's behaviour. One characteristic that is common in all the research questions outlined in Chapter 1 is that these questions entail a measurement of income. The nature of these observable data makes the positivist methodology and quantitative methods more suitable to answer the research questions in comparison to a qualitative approach.

The theoretical framework depicted in Figure 3.1 shows that academic research explains the value relevance of accounting information based on the statistical association between accounting amounts and market value of equity. Thus, it implements a positivist approach and emphasizes scientific methods to attain empirically testable results. This is in contrast to the Framework that defines value relevance in terms of decision usefulness using qualitative characteristics of financial statements, both fundamental and enhancing. The social constructivist philosophy would have been more suited to assess the value relevance as defined by the Framework. Research design based on social constructivism philosophy would pay close attention to exploration of investors' behaviour with regards to the qualitative characteristics of financial statements, how they facilitate the decision-making process, and how they influence investors' individual valuation analysis. Therefore, the social constructivism approach would demand to understand investors' individual attributes (behaviour, understanding, presumptions), and the way in which investors understand each other's attributes. Consequently, this type of methodology would certainly introduce subjectivity into the research findings, as the inferences about investors' characteristics would be a result of researcher personal experience and insight. It would therefore be impossible to verify the procedure and the findings, and only offer an alternative interpretation on the data collected.

Figure 3.1: Theoretical framework of value relevance research



Source: Compiled by the author.

Figure 3.1 depicts the theoretical framework employed in this study to examine the CI value relevance in Slovakia.

3.2 Data

The philosophy of positivism adheres to the view that only factual knowledge gained through observation is trustworthy. By selecting a positivist stance, quantifiable observations will form the data set of this study. When collecting the data in positivist studies, the researcher maintains an independent position so that s/he does not interact with the research participants and the data itself.

In the view of fundamental analysis, investors rely upon financial statement information to determine the intrinsic value of a stock. As the research questions attempt to determine what accounting figure has greater association with the market value of equity, the research design requires two sets of data: (1) accounting data, and (2) stock market data.

3.2.1 Availability of data

The data collected for this study is publicly available on the financial databases that can be assessed over the Internet. According to the Fourth EU Company Law Directive, every EU company with limited liability, regardless of whether it is public or private, is required to publish annual accounts, an annual report, and the opinion of the person responsible for auditing the accounts in the central register, commercial register, or companies register in the Member State of its corporation (Council Directive 2009/101/EC art. 2). Therefore, this study uses secondary data already published on public domains and does not involve human participants. Moreover, in accordance with the Open University regulations, this study was issued an ethics approval by Human Research Ethics Committee on 14 June 2016 (Appendix B).

3.2.2 Data sources

The data was collected from five sources: (1) FinStat database[25], private database providing financial reports, financial statements and other information on all Slovakian companies registered at Commercial Register; (2) Central Register of Regulated Information[26], public database of National Bank of Slovakia providing regulated information on issuers whose securities are admitted to trading on a regulated market according to the Stock Exchange Act No. 429/2002 and Act No. 566/2001 on Securities and Investment Services; (3) Bratislava Stock Exchange[27] providing comprehensive summaries on stock market data; (4) Amadeus database; and (5) Thomson One database. The key issue with the collection of the data was a non-existence of CI data for Slovakian entities on financial databases. Therefore, all accounting data was hand-collected from annual financial reports published on FinStat database and Central Register of Regulated Information.

As explained in Chapter 2, the majority of Slovakian public listed companies do not comply with IFRS when preparing their consolidated financial statements. Therefore, this study adopts a comparative design, in which we investigate a difference in CI value relevance between the companies reporting in line with IFRS, and companies reporting in accordance with SAR.

[25] Available at: http://www.finstat.sk.
[26] Available at: https://ceri.nbs.sk/index.
[27] Available at: http://www.bsse.sk/bcpben/MainPage/tabid/104/language/en-US/Default.aspx.

4 Collecting and analysing the data

As a continuation to the previous discussion, this chapter will provide a detailed description of the sample, time period and the data collected. Furthermore, this chapter will describe the methods of analysis and the rationale behind the chosen models to investigate the CI value relevance in Slovakia.

4.1 Sample companies

The sample consists of public Slovakian companies listed on the Bratislava Stock Exchange (BSSE) in Slovakia in January 2016. Depending upon which accounting standards these entities follow to prepare consolidated financial statements, two sets of companies are formed: (1) companies following IFRS, and (2) companies following SAR (see Appendix C). In total, there are 92 companies listed on Bratislava Stock Exchange. Due to the unavailability of financial reports, and the exclusion of financial entities and companies in liquidation, the final sample contains 46 companies; of these 10 follow IFRS and 36 follow SAR.

4.1.1 Outliers

Firm-year observations with an absolute Z-standard score of greater than 3.29 were excluded from the sample of all companies only. The procedure of excluding outliers resulted in further diminution of the observations, particularly amongst IFRS companies. However, these outliers were not excluded when the analysis was performed for IFRS and SAR separately, as they did not meet the exclusion condition within its subgroup.

Table 4.1 shows the process of sample reduction, reasoning and the number of companies involved. Table 4.2 shows the company classification by GICS[28] sectors and industries. Additionally, total assets for each industry in 2014 stated in thousands of euros is provided.

Table 4.1: Process of sample reduction

	Number of companies	**Subtotal**
Bratislava Stock Exchange	92	92
Bankruptcy	1	91
In liquidation	3	88
Non-trading	2	86
Unavailability of accounting data	17	69
Unavailability of market data	23	46
Final sample size	46	

Source: Compiled by the author.

Table 4.1 shows the reason and number of companies involved in the reduction of the sample.

[28] The Global Industry Classification Standard (GICS) is an industry taxonomy developed in 1999 by MSCI and Standard & Poor's for use by the global financial community.

Table 4.2: Sample companies by GICS sector and industry, and total assets

Sector	Industry	Sample size (%)	Total Assets (thousand EUR in 2014)
Energy	Oil, gas & consumable fuels	1 (2)	2,184,582
Materials	Chemicals	2 (4)	54,673
	Construction materials	2 (4)	390,605
	Metals & mining	1 (2)	2,501
	Paper & forest products	1 (2)	2,996
Industrials	Construction & engineering	9 (17)	173,337
	Machinery	1 (2)	8,954
	Commercial services & supplies	9 (13)	165,082
Consumer	Auto components	1 (4)	15,310
discretionary	Hotel, restaurants & leisure	5 (11)	766,634
	Diversified consumer services	1 (2)	7,995
	Multiline retail	1 (2)	2,600
Consumer	Food products	2 (4)	73,726
staples	Household products	1 (2)	47,357
Health care	Biotechnology	1 (2)	10,151
	Pharmaceuticals	2 (4)	211,437
Financials	Real estate	5 (9)	23,403
Information technology	IT Services	1 (2)	128,345
Total		46 (100%)	4,269,688

Source: Compiled by the author.

4.2 Time period

The time period chosen for this study spans from 2012 until 2014 inclusive. This period was selected as it is most recent at the commencement of this study. It may also not be suitable to further extend the period into the past as Fasan et al. (2014, p. 30-31) indicate 'the probable presence of a strong downward bias during [the] time period [2009-2011] [that] stem[s] from the global financial crisis and the European sovereign debt crisis that affected the European stock markets'.

4.3 Dependent variables

The following two dependent variables represent the stock market data collected for this study.

4.3.1 Share price (Price)

Used as a dependent variable in the price-levels model, share price of firm's equity is the market price per share three months after the end of the fiscal year[29]. It was collected from three sources in the following order of priority: (1) Amadeus database, (2) Thomson One database, and (3) Bratislava Stock Exchange website.

4.3.2 Stock return (Ret)

Used as a dependent variable in the return model, stock return represents actual return measured over 12 months period ending three months after the end of the fiscal year. Stock return has been calculated as follows: $Ret_1 = (P_1 - P_0)/P_0$, where P_1 is the price

[29] The end of the fiscal year is the end of the calendar year (31st December) except for two companies: Best Hotel Properties, a. s. and Progres, a. s.

per share at the end of the period and P_0 is the price per share at the beginning of the period.

4.4 Independent variables

The following six independent variables (PL, Reval, Forex, Unreal, OCI, CI) represent the accounting data collected for this study. The accounting variables were hand-collected from the financial statements published on two sources that we referred to in the following order of priority: (1) FinStat database and (2) Central Register of Regulated Information.

If a company followed IFRS, the accounting variables were explicitly stated in the statement of comprehensive income and thus readily available for collection. However, if a company followed SAR, the accounting variables had to be first identified/calculated using the information provided in the statement of financial position and the statement of income. The following paragraphs discuss the differences in reporting PL, OCI, and CI between IFRS and SAR, and the way we acquired the accounting data for companies following SAR.

4.4.1 Profit or loss for the period (PL)

To calculate profit or loss for a period for a group of companies following SAR, we start with *výsledok hospodárenia za účtové obdobie po zdanení*, which is the final figure in the statement of financial performance prepared under SAR. As this figure already includes the adjustment for translation of financial statements of foreign operation and adjustment for remeasuring available-for-sale financial assets, we subtract these two items to produce a comparable amount to profit or loss reported under IFRS.

4.4.2 Changes in revaluation surplus (Reval)

Under IFRS, an entity shall choose the measurement of property, plant and equipment (PPE) subsequent to the initial recognition. According to IAS 16, the two options include: (1) the cost model, and (2) the revaluation model. The chosen accounting policy should be applied to an entire class of PPE (IAS 16.29). The cost model measures assets at costs less accumulated depreciation and impairment losses, and thus it does not affect the OCI. On the other hand, using the revaluation model, the asset is carried at revaluated amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and impairment losses.

Under SAR, generally, only the cost model is allowed. However, assets are measured at fair value if they are acquired as a result of a contribution or purchase of a business or purchase of a business and assets acquired in exchange (Article 25 (1e) of the Act on Accounting). Any gains or losses from the revaluation of these assets are then recognised directly in the statement of financial position under the item *414-Oceňovacie rozdiely z precenenia majetku a záväzkov.*

4.4.3 Gains and losses arising from translating the financial statements of a foreign operation (Forex)

Under IFRS, according to IAS 21, an entity can present its financial statements in any currency. However, if the presentation currency differs from the functional currency, the results and financial position of an entity must be translated into the presentation currency in order to prepare consolidated financial statements (IAS 21.38). IAS 21.39 further states that assets and liabilities for each statement of financial position presented shall be translated at the closing rate at the date of that statement of financial position. Income and expenses for each statement of comprehensive income or separate income

statement presented shall be translated at exchange rates at the dates of the transactions and all resulting exchange differences shall be recognised in OCI[30].

Under SAR, the process of translating foreign operations is similar to IFRS; assets and liabilities are translated at the closing rate. Similarly, revenues and expenses are translated using actual rates at the date of transaction or appropriate averages. Unlike IFRS, SAR does not address the topic of hyperinflation. The resulting exchange differences are reported in the statement of income under the items *563-Kurzové straty* (Exchange losses) and *663-Kurzové zisky* (Exchange gains) according to Article 24 of the Accounting Procedures.

4.4.4 Gains and losses on re-measuring available-for-sale financial assets (Unreal)

Although the new IFRS 9 Financial Instruments (replacing IAS 39 requirements for classification and measurement, impairment, hedge accounting and de-recognition) was issued in July 2014, this standard is effective for annual periods beginning on or after 1 January 2018. Therefore, we will discuss the reporting of available-for-sale financial assets applicable to the timing of this study.

Under IFRS, according to IAS 39, there are four categories of financial assets: (1) financial asset or financial liability at fair value through profit or loss, (2) held-to-maturity investments, (3) loans and receivables, and (4) available-for-sale financial assets. Available-for-sale assets are the only financial instruments that influence OCI. IAS 39.9 defines available-for-sale assets as 'those non-derivative financial assets that are designated as available for sale or are not classified as loans and receivables, held-to-maturity investments or financial assets at fair value through profit or loss' (p. 5). On initial recognition an asset is reported at fair value and at period-ends it is restated to

[30] IAS 21.39 states that this procedure is followed if the functional currency of an entity is not the currency of a hyperinflationary economy.

fair value with changes in fair value reported under OCI (Elliot and Elliot, 2013, p. 347).

Unlike IFRS, there is no comprehensive classification of all financial assets and liabilities in SAR. According to Article 14 of Accounting Procedures, securities are classified in the following three categories: (1) held for trading, (2) debt instruments held to maturity, and (3) available-for-sale. The available-for-sale financial assets can be re-measured to a fair value, and the difference is recognised in the statement of income under the item *664-Výnosy z precenenia cenných papierov* if the fair value is greater than book value, and under *564-Náklady na precenenie cenných papierov* if the fair value is less than book value.

4.4.5 Other comprehensive income (OCI)

For a group of companies following SAR, other comprehensive income was calculated as a change between comprehensive income and profit or loss for a period.

4.4.6 Comprehensive income (CI)

For a group of companies following SAR, comprehensive income was calculated according to Ohlson's (1999) clean surplus formula, that is, as a change in net assets during a reporting period from the non-owner sources.

4.4.7 Book value (BV)

Book value was collected from the Amadeus database for all companies. Book value is the net asset value of a company calculated by subtracting intangible assets and liabilities from total assets.

4.4.8 IFRS dummy (IFRS)

IFRS dummy variable was used to distinguish between a company preparing consolidated financial statements according to IFRS and a company preparing consolidated financial statements in line with SAR. IFRS dummy is equal to 1 if a company follows IFRS and 0 if a company follows SAR.

Tables 4.3, 4.4 and 4.5 report the descriptive statistics and Spearman correlations for the sample of public Slovakian listed companies used in the value relevance analysis.

Table 4.3: Descriptive statistics using raw data

Panel A: Descriptive statistics using raw data (all companies)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
PL	124	-49,155,000	37,037,000	-109,139	8,301,255	-1.212	18.333
Reval	124	-5,274,556	1,329,488	-50,452	586,816	-6.467	54.721
Forex	124	-3,552,000	2,589,000	-8,979	446,772	-2.120	42.139
Unreal	124	-282,832	100,590	-3,197	37,654	-6.549	49.420
OCI	124	-10,914,810	2,589,000	-240,646	1,440,617	-5.119	33.546
CI	124	-49,155,000	37,037,000	-349,786	8,250,785	-1.164	18.767
BV	124	-6,869,309	265,933,694	17,348,249	40,994,121	4.289	21.586

(continued on next page)

Panel B: Descriptive statistics using raw data (as-if companies)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
PL	105	-21,942,818	9,300,830	-86,942	2,779,396	-4.581	39.195
Reval	105	-5,274,556	1,329,488	-63,393	636,064	-5.965	46.364
Forex	105	-590,464	74,208	-9,945	60,451	-8.774	83.831
Unreal	105	0	100,590	1,911	11,910	6.875	50.437
OCI	105	-10,914,810	2,135,551	-281,563	1,490,881	-5.368	33.998
CI	105	-22,404,569	4,732,608	-368,504	2,621,823	-6.239	50.032
BV	105	-39,590	75,610,520	7,823,349	13,977,362	3.051	10.022

(continued on next page)

Panel C: Descriptive statistics using raw data (as-reported companies)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
PL	19	-49,155,000	37,037,000	-231,809	20,645,542	-0.501	1.393
Reval	19	-29,471	414,636	21,061	95,623	4.310	18.709
Forex	19	-3,552,000	2,589,000	-3,639	1,158,802	-0.921	5.526
Unreal	19	-282,832	6,000	-31,426	88,743	-2.781	6.444
OCI	19	-3,552,000	2,589,000	-14,530	1,129,419	-1.068	6.260
CI	19	-49,155,000	37,037,000	-246,340	20,626,505	-0.495	1.417
BV	19	-6,869,309	265,933,694	69,985,854	83,071,575	1.429	1.546

Table 4.3 reports descriptive statistics of accounting variables using raw data.

Panel A reports descriptive statistics for the sample of all companies. Panel B reports descriptive statistics for the sub-sample of as-if companies (reporting in SAR). Panel C reports descriptive statistics for the sub-sample of as-reported companies (reporting in IFRS).

All variables are presented in whole euros.

Table 4.4: Descriptive statistics using return data (all companies)

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*	*Skewness*	*Kurtosis*
Ret	124	-0.800	9.000	0.113	0.8834	8.501	84.626
PL	124	-203.689	5.074	-4.367	26.989	-6.424	40.835
Reval	124	-393.522	80.655	-2.437	36.173	-10.341	113.797
Forex	124	-0.173	0.411	0.001	0.050	5.609	45.775
Unreal	124	-0.086	0.019	-0.001	0.010	-7.604	61.838
OCI	124	-278.855	80.590	-1.080	26.847	-8.801	95.773
CI	124	-482.544	63.229	-5.447	46.354	-9.285	93.688

Table 4.4 reports descriptive statistics of all variables used in the return regressions for the sample of all companies.

All independent variables are measured on per-share basis and scaled by the lagged price per share.

Table 4.5: Spearman correlation

Panel A: Spearman correlation in price-levels model (all companies)

Variable	$Price_t$	PL_t	$Reval_t$	$Forex_t$	$Unreal_t$	OCI_t	CI_t	BV_{t-1}
$Price_t$	1.000							
PL_t	**0.228***	1.000						
$Reval_t$	-0.065	-0.101	1.000					
$Forex_t$	-0.168	-0.014	-0.019	1.000				
$Unreal_t$	0.065	0.029	0.027	**-0.902****	1.000			
OCI_t	-0.086	-0.116	0.103	0.091	-0.041	1.000		
CI_t	0.088	**0.598****	0.014	0.064	-0.013	**0.727****	1.000	
BV_{t-1}	**0.490****	**0.386****	-0.024	**-0.181***	0.066	**-0.177***	0.124	1.000

*, ** Indicate statistical significance at 5 and 1 per cent, respectively.

All variables in Panel A are measured on per-share basis.

(continued on next page)

Panel B: Spearman correlation in return model (all companies)

Variable	Ret_t	PL_t	$Reval_t$	$Forex_t$	$Unreal_t$	OCI_t	CI_t
Ret_t	1.000						
PL_t	**-0.498****	1.000					
$Reval_t$	**0.195***	**0.547****	1.000				
$Forex_t$	-0.079	**0.293****	**0.282****	1.000			
$Unreal_t$	-0.020	-0.016	-0.007	**-0.929****	1.000		
OCI_t	**0.302****	**0.483****	**0.973****	**0.261****	-0.006	1.000	
CI_t	-0.115	**0.862****	**0.882****	**0.322****	-0.013	**0.860****	1.000

*, ** Indicate statistical significance at 5 and 1 per cent, respectively.

All variables in Panel B are measured on per-share basis and scaled by the lagged price per share.

Table 4.5 reports Spearman correlation for the sample of all companies. Panel A reports Spearman correlation for the variables used in price-levels model and Panel B reports Spearman correlation for the variables used in return model.

4.5 Analysing data

In this section, the description of the models and the rationale behind the selection will be discussed.

4.5.1 Choice of models

The choice of the models selected for this study originates from the study by Goncharov and Hodgson (2011) and the research questions outlined in Chapter 1.

Traditionally, studies investigating CI value relevance use statistical association between market measures and accounting figures to assess the level of value relevance. Value relevance is measured as the ability of financial statement information to capture or summarise information that affects share values (Francis and Schipper, 1999, p. 327). This view assumes that the function of accounting figures is to represent the economic income as reflected in stock returns, and economic value as reflected in stock prices (Hellström, 2006, p. 326). In other words, value relevance of accounting information can be assessed through a degree of association between accounting amounts and both stock returns and stock prices.

There are several key reasons our research design adopts the models from Goncharov and Hodgson (2011). First, in comparison with Fasan et al. (2014) and O'Hanlon and Pope (1999), we extend the analysis of value relevance by adding the valuation perspective in which the association between stock prices and accounting amounts is investigated. Second, we calculate CI in accordance with clean surplus practice that is change in net assets from non-owner sources, whereas O'Hanlon and Pope (1999) compute CI as operating profit adjusted for four dirty surplus items.

Thirdly, in contrast with Mechelli and Cimini (2014), we allow for a lagging effect of three months after the end of the fiscal year when calculating the actual return[31]. Fourthly, we examine the incremental value relevance of individual OCI items, whereas Fasan et al. (2014) and Mechelli and Cimini (2014) only investigate the incremental value relevance of aggregate OCI.

The models adopted from Goncharov and Hodgson (2011) examine both the relative and incremental value relevance, and employ the evaluation of both information and valuation perspective. The key difference between value relevance studies using valuation and those using information perspective is that latter are interested in determining what is reflected in changes in value over a specific period of time, whilst the former are interested in determining what is reflected in firm value (Barth et al., 2001, p. 95). In other words, examining changes in value (information perspective) is suitable research design when research questions involve determination of whether accounting amounts are timely. Therefore, by employing both perspectives, we are able to examine not only the value relevance but also test for a timeliness of accounting figures, which is one of the enhancing qualitative characteristics of useful financial information[32].

In our regression analyses, we include additional variable IFRS that was omitted in Goncharov and Hodgson (2011). IFRS dummy variable allows us to draw inferences about the significance of the findings between IFRS and SAR companies.

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[31] Slovakian companies have up to three months after the end of the fiscal year to complete their financial filings.

[32] Cf. IASB (2010), QC4.

4.5.2 Price-levels model

The valuation or measurement perspective is examined using a price-levels model. This model tests whether the accounting amount is associated with share prices. The research design adopted in this model is based on the theoretical work of Ohlson (1995), which defines the firm value as a function of a company's book value and abnormal or residual income. This model focuses on the residual income relation, which provides a direct link between company value and accounting data (Van Cauwenberge and De Beelde 2007, p. 12). We apply the work of Ohlson (1995) by using the following valuation function:

$$Market\ cap_{it} = \alpha_0 + \alpha_1 BV_{it-1} + \alpha_2 PL_{it} + v_{it} \quad \text{(A)}$$

Source: Kanagaretnam et al. (2009, p. 355)

where *market cap*$_{it}$ equals the market capitalization of company i in time t defined as number of shares outstanding times price per share, BV_{it-1} equals book value of equity at time *t-1*, PL_{it} equals profit or loss for the period t and v_{it} expresses other information about future abnormal earnings reflected in equity value but currently not in the financial statements.

To test the association between share prices and CI, PL variable in equation (A) is replaced by CI. Thus to investigate the relative value relevance of PL and CI using price-levels model the following regression equations are estimated:

$$price_{it} = \alpha_1 + \alpha_2 BV_{it-1} + \alpha_3 PL_{it} + \alpha_4 IFRS_{it} + \varepsilon_{1it} \quad \text{(1a)}$$

$$price_{it} = \beta_1 + \beta_2 BV_{it-1} + \beta_3 CI_{it} + \beta_4 IFRS_{it} + \varepsilon_{2it} \quad \text{(1b)}$$

Source: Goncharov and Hodgson (2011, p. 38)

To determine whether stock prices reflect the incremental information that is disclosed in the aggregate OCI and its components over book value of equity and PL, we test for incremental value relevance using the following regression equations:

$$price_{it} = \gamma_1 + \gamma_2 BV_{it-1} + \gamma_3 PL_{it} + \gamma_4 OCI_{it} + \gamma_5 IFRS_{it} + \varepsilon_{3it} \quad (1c)$$

$$price_{it} = \delta_1 + \delta_2 BV_{it-1} + \delta_3 PL_{it} + \delta_4 Reval_{it} + \delta_5 Forex_{it} + \delta_6 Unreal_{it} + \delta_7 IFRS_{it} + \varepsilon_{4it} \quad (1d)$$

Source: Goncharov and Hodgson (2011, p. 38)

where $price_{it}$ is the price per share of company i three months after the end of the fiscal year, BV_{it-1} is the book value of equity, PL_{it} is profit or loss for the period, CI_{it} is comprehensive income for the period, $Reval_{it}$ is the change in revaluation surplus, $Forex_{it}$ are gains and losses arising from translating the financial statements of a foreign operation, and $Unreal_{it}$ are gains and losses on remeasuring available-for-sale financial assets for the fiscal year t deflated by the number of outstanding shares in the end of the period[33]. $IFRS_{it}$ is a dummy variable that is equal to 1 if a company follows IFRS and 0 if a company follows SAR.

Although the price model is widely used in value relevance research, it suffers from two important econometric problems. First, the individual companies included in the sample may differ significantly in the levels of book value and earnings. This may that cause variances to fluctuate and thus may lead to heteroscedasticity[34], which is a major concern in the application of regression analysis. Secondly, earnings and book values

[33] Number of shares outstanding was collected from Amadeus database, and represents all the shares of a company, which have been authorized, issued and purchased by investors and held by them at the end of the fiscal year.

[34] Heteroscedasticity refers to the situation in which the variability of a variable is unequal across the range of values of a second variable that predicts it.

are highly correlated as book values contain previous year's earnings (Klimczak, 2009, p. 9). However, both problems can be solved by the method of scaling. The methods of scaling do eventually lead to the use of return regression that will be discussed further in the next section.

4.5.3 Return model

In the second model, we use the returns regressions, in which the dependent variable is raw returns and independent variables are raw earnings and earnings surprises, to assess the degree of value relevance. The following are the regressions equations estimated:

$$ret_{it} = \alpha_1 + \alpha_2 PL_{it} + \alpha_3 IFRS_{it} + \varepsilon_{1it} \quad (2a)$$

$$ret_{it} = \beta_1 + \beta_2 CI_{it} + \beta_3 IFRS_{it} + \varepsilon_{2it} \quad (2b)$$

$$ret_{it} = \gamma_1 + \gamma_2 PL_{it} + \gamma_3 OCI_{it} + \gamma_4 IFRS_{it} + \varepsilon_{3it} \quad (2c)$$

$$ret_{it} = \delta_1 + \delta_2 PL_{it} + \delta_3 Reval_{it} + \delta_4 Forex_{it} + \delta_5 Unreal_{it} + \delta_6 IFRS_{it} + \varepsilon_{4it} \quad (2d)$$

Source: Goncharov and Hodgson (2011, p. 38)

where ret_{it} equals cumulative raw stock returns measured over a year period ending three months after the end of fiscal year. All other variables are as previously defined and measured on per-share basis and scaled by lagged price per share.

4.5.4 Panel data and regression model

The panel data (Appendix D) adopted within this study contains information about individual behaviour across companies and over time. Therefore, the variation of dependent variables and regressors are considered as overall. Panel data represent repeated observations of multiple variables on a group of entities over a specified period of time forming cross-sectional time-series data set. The main advantage of using panel

data is that it allows for analysis of additional variation in observations across time and individual companies (Günther, 2015, p. 152). This would not be possible to observe in cross-sectional or time-series data. Moreover, panel data allows to control for individual heterogeneity and dynamic effects that cannot be identified in cross-sectional analyses (Greene, 2003, p. 343) and to incorporate unobservable individualities in the econometric model.

Consistent with Goncharov and Hodgson (2011) we use pooled OLS regression. Greene (2003) states five major assumptions of OLS regression: (1) linear relation between dependent and independent variables, (2) no perfect multicollinearity, (3) homoscedasticity, (4) exogeneity of independent variables and (5) independence of observations.

5 Interpreting the data

In this chapter, the results of the value relevance analysis using price-levels and return model will be presented. The findings will then be compared with the results of previous studies, and interpreted with regards to the research questions that were outlined in Chapter one. Chapter five is divided into two sections; section one interprets the results of the price-levels model and section two reviews the results of the return model.

5.1 Price-levels model results interpretation (Valuation perspective)

In this section, the results for the price-level associations of different income definitions and book value will be presented. We use the following regression equations outlined in Chapter four to test the association:

Model (1a) $$price_{it} = \alpha_1 + \alpha_2 PL_{it} + \alpha_3 BV_{it-1} + \alpha_4 IFRS_{it} + \varepsilon_{1it}$$

Model (1b) $$price_{it} = \beta_1 + \beta_2 CI_{it} + \beta_3 BV_{it-1} + \beta_4 IFRS_{it} + \varepsilon_{2it}$$

Model (1c) $$price_{it} = \gamma_1 + \gamma_2 PL_{it} + \gamma_3 BV_{it-1} + \gamma_3 OCI_{it} + \gamma_4 IFRS_{it} + \varepsilon_{3it}$$

Model (1d) $$price_{it} = \delta_1 + \delta_2 PL_{it} + \delta_3 BV_{it-1} + \delta_4 Reval_{it} + \delta_5 Forex_{it} + \delta_6 Unreal_{it} + \delta_7 IFRS_{it} + \varepsilon_{4it}$$

We start the analysis with the sample of all companies and including the IFRS dummy variable to find whether the results are significant for any reporting group of companies. Table 5.1 reports the results of the price-levels model using the sample of all companies.

Table 5.1: Price-levels model results (all companies)

	Intercept	PL_t	CI_t	BV_{t-1}	OCI_t	$Reval_t$	$Forex_t$	$Unreal_t$	$IFRS_t$	R^2	*df*
Model	4.263	0.143		0.166					13.740	0.277	123
(1a)	(1.520)	(0.746)		**(5.844)****					**(2.420)***		
Model	3.835		0.065	0.172					13.609	0.276	123
(1b)	(1.412)		(0.531)	**(6.491)****					**(2.396)***		
Model	4.236	0.144		0.166	0.016				13.757	0.277	123
(1c)	(1.498)	(0.748)		**(5.773)****	(0.106)				**(2.412)***		
Model	4.351	0.173		0.152		-0.753	-17.506	-49.732	14.803	0.299	123
(1d)	(1.553)	(0.894)		**(5.071)****		(-0.587)	(-1.326)	(-0.686)	**(2.473)***		

*, ** Indicate statistical significance at 5 and 1 per cent, respectively.

Table 5.1 reports results of the value relevance analysis using price-levels model for the sample of Slovakian companies from 2012 to 2014 with the outliers excluded. The t-statistics are based on adjusted standard error and are reported in parentheses.

The dependent variable in all models is price per share three months after the end of fiscal year.

All variables are measured on per-share basis (except IFRS dummy).

In line with previous studies (Mechelli and Cimini, 2014; Goncharov and Hodgson, 2011), the coefficient for book value is positive and highly significant at 1 per cent for all models in price-levels regressions. Although coefficients for PL and CI are positive, they are not significant at any level in all models where they are included. This initial observation suggests that we cannot draw any inferences about the value relevance and thus we decide to run the analysis of price-levels regressions separately for the group of IFRS and SAR companies. Thus, we omit the IFRS dummy and test the following regression equations for each group:

Model (2a) $$price_{it} = \alpha_1 + \alpha_2 PL_{it} + \alpha_3 BV_{it-1} + \varepsilon_{1it}$$

Model (2b) $$price_{it} = \beta_1 + \beta_2 CI_{it} + \beta_3 BV_{it-1} + \varepsilon_{2it}$$

Model (2c) $$price_{it} = \gamma_1 + \gamma_2 PL_{it} + \gamma_3 BV_{it-1} + \gamma_4 OCI_{it} + +\varepsilon_{3it}$$

Model (2d) $$price_{it} = \delta_1 + \delta_2 PL_{it} + \delta_3 BV_{it-1} + \delta_4 Reval_{it} + \delta_5 Forex_{it} + \delta_6 Unreal_{it} + \varepsilon_{4it}$$

Table 5.2 presents the results of the price-levels model separately for the group of companies following IFRS in Panel A, and the group of companies following SAR in Panel B.

Table 5.2: Price-levels model (by accounting standards)

Panel A: Price-levels model (IFRS companies)

	Intercept	PL_t	CI_t	BV_{t-1}	OCI_t	$Reval_t$	$Forex_t$	$Unreal_t$	R^2	*df*
Model (2a)	0.850	1.159		0.838					0.686	29
	(0.105)	**(4.336)****		**(5.915)****						
Model (2b)	0.870		1.157	0.838					0.686	29
	(0.107)		**(4.323)****	**(5.903)****						
Model (2c)	0.824	1.158		0.839	-0.918				0.687	29
	(0.099)	**(4.252)****		**(5.807)****	(-0.125)					
Model (2d)	3.841	1.170		0.823		-0.423	-2.793	22.086	0.704	29
	(0.414)	**(4.242)****		**(5.503)****		(-0.025)	(-0.322)	(0.977)		

(continued on next page)

Panel B: Price-levels model (SAR companies)

	Intercept	PL_t	CI_t	BV_{t-1}	OCI_t	$Reval_t$	$Forex_t$	$Unreal_t$	R^2	*df*
Model (2a)	4.711	0.189		0.169					0.289	107
	(1.743)	(0.739)		**(5.832)****						
Model (2b)	5.535		0.196	0.152					0.332	107
	(2.313)*		**(2.685)***	**(6.460)****						
Model (2c)	3.865	0.161		0.176	0.226				0.346	107
	(1.475)	(0.654)		**(6.261)****	**(3.001)***					
Model (2d)	4.674	0.140		0.147		-1.540	-22.580	9.455	0.343	107
	(1.767)	(0.549)		**(4.875)****		(-1.348)	(-2.445)	(1.061)		

*, ** Indicate statistical significance at 5 and 1 per cent, respectively.

The t-statistics are based on adjusted standard error and are reported in parentheses.

Table 5.2 reports the results of the price-levels model; in Panel A using the sample of as-reported companies and in Panel B using the sample of as-if companies with no outliers excluded.

All variables are measured on per-share basis.

When we run the analysis separately, we find that SAR group of companies is responsible for insignificant PL coefficients in Table 5.1.

The first step of our research design is to assess the relative value relevance, in which we compare the value relevance of PL and CI. According to Table 5.2 Panel A, the coefficients for PL and CI are both positive and highly significant at 1 per cent. Using price-levels model, the findings presented in Table 5.2 Panel A suggest that PL is more value-relevant than CI for the group of IFRS companies. The coefficient for PL (1.159) is greater than the coefficient for CI (1.157), however the R^2 in both models (2a and 2b) report the same value (0.686). In contrast, findings in Table 5.2 Panel B suggest that only CI is value-relevant in explaining stock prices. The coefficient for PL is not statistically significant, whereas the coefficient for CI is positive and statistically significant at 5 per cent. We explain this observation by the method of calculating PL for the group of SAR companies. In order to calculate PL using SAR financial statements, we had to subtract Forex and Unreal from net income reported under SAR. However, these accounts are not solely used for reporting OCI elements. For example, accounts *563-Kurzové straty* (exchange losses) and *663-Kurzové zisky* (exchange gains) are also used to report exchange differences as a result of transactions. Therefore, this could have introduced a measurement error into OCI elements reported under SAR.

The second step of our research design involves assessing the incremental value relevance in which we analyse the value relevance of aggregate OCI and the OCI elements once added to profit (loss) and book value. Models (2c) and (2d) in Table 5.2 show the results of the incremental value relevance analyses using the price-levels model. Findings in Table 5.2 Panel A suggest that neither aggregate OCI nor OCI individual items (Reval, Forex, Unreal) provide value-relevant information once added separately to PL and BV in the group of IFRS companies. However, aggregate OCI

provides value-relevant information in the group of SAR companies; yet PL remains insignificant variable in explaining the stock prices.

5.2 Return model results interpretation (Information perspective)

In the following section, the results of the return model regressions on association between PL, CI, OCI and its components will be presented.

Table 5.3 reports the results of the following regression equations:

Model (3a) $$ret_{it} = \alpha_1 + \alpha_2 PL_{it} + \alpha_3 IFRS_{it} + \varepsilon_{1it}$$

Model (3b) $$ret_{it} = \beta_1 + \beta_2 CI_{it} + \beta_3 IFRS_{it} + \varepsilon_{2it}$$

Model (3c) $$ret_{it} = \gamma_1 + \gamma_2 PL_{it} + \gamma_3 OCI_{it} + \gamma_4 IFRS_{it} + \varepsilon_{3it}$$

Model (3d) $$ret_{it} = \delta_1 + \delta_2 PL_{it} + \delta_3 Reval_{it} + \delta_4 Forex_{it} + \delta_5 Unreal_{it} + \delta_6 IFRS_{it} + \varepsilon_{4it}$$

We follow the same structure of interpretation as in the previous section and first evaluate the relative value relevance, following by the incremental value relevance analysis.

According to Table 5.3, the coefficient for PL is positive and highly significant at 1 per cent, whereas the coefficient for CI is not statistically significant. This result suggests that PL is more value-relevant than CI in explaining stock returns. This is further supported by the value of R^2 that is greater in model (3a) than in model (3b), 0.252 and 0.021 respectively. The IFRS dummy is not significant in both models, thus this finding holds for SAR group of companies.

Table 5.3: Return model results (all companies)

	Intercept	PL_t	CI_t	OCI_t	$Reval_t$	$Forex_t$	$Unreal_t$	$IFRS_t$	R^2	*df*
Model (3a)	0.065	0.016						-0.149	0.252	123
	(0.855)	**(6.269)****						(-0.777)		
Model (3b)	0.134		0.002					-0.212	0.021	123
	(1.544)		(1.231)					(-0.963)		
Model (3c)	0.038	0.027		0.023				-0.038	0.634	123
	(0.713)	**(13.225)****		**(11.200)****				(-0.948)		
Model (3d)	0.024	0.020			0.022	-22.317	-115.380	-0.351	0.622	123
	(0.426)	**(7.077)****			**(10.344)****	**(-4.197)****	**(-4.287)****	**(-2.321)****		

*, ** Indicate statistical significance at 5 and 1 per cent, respectively.

Table 5.2 reports the results of the value relevance analysis using return model for the sample of Slovakian companies from 2012 to 2014 with the outliers excluded. The t-statistics are based on adjusted standard error and are reported in parentheses.

All independent variables are measured on per-share basis and scaled by the lagged price per share (except IFRS dummy).

Models (3c) and (3d) evaluate the incremental value relevance of OCI and its components. Using a return model, the results in Table 5.3 suggest that aggregate OCI provide value-relevant information. However, the IFRS dummy is not significant; therefore, this result is only applicable to the group of SAR companies. On the other hand, the three OCI elements (Reval, Forex and Unreal) provide value-relevant information in addition to PL when explaining stock returns in the group of IFRS companies, as IFRS dummy is significant in model (3d).

The results of relative value relevance suggest that PL is more value-relevant than CI using both models in companies following IFRS standards, and using the return model in companies following SAR. We cannot draw any inference about relative value relevance for the group of as-if companies using the price-levels model. Based on these results, we accept [H1] and [H2] and conclude that profit or loss is more value-relevant than comprehensive income in the financial statements of Slovakian listed entities prepared according to IFRS and SAR standards.

This finding is in line with the majority of studies using the sample of business entities listed in the EU countries (Mechelli and Cimini, 2014; Goncharov and Hodgson, 2011; O'Hanlon and Pope, 1999). However, our finding is in contrast with the results from the studies by Biddle and Choi (2006) and Kanagaretnam et al. (2009) that conclude that the definition of comprehensive income adopted by FASB in SFAS 130 dominates net income in the information and valuation content. It is important to mention that both studies (Kanagaretnam et al., 2009; Biddle and Choi, 2006) were conducted on the sample of US entities. The greater value relevance of PL over CI may be embedded in the nature of CI content. The comprehensive income incorporates unrealized components of income that under dirty surplus reporting would bypass the statement of income and be reported in the statement of changes in equity. Goncharov and Hodgson

(2011, p. 31) state that 'comprehensive income contains number of transitory components contingent on future events'. Therefore, these items can introduce noise and uncertainty into reported numbers and thus inhibit the decision-making of the users of financial statements. O'Hanlon and Pope (1999) further stipulate that the inclusion of these items makes it more difficult for investors to uncover long-term performance as they need to 'take significant time to sift through temporary or irrelevant components'.

The greater value relevance of PL for the group of Slovakian companies using IFRS is supported by the view of Chambers et al. (2007) that investors need to become progressively familiar with the reporting location of comprehensive income. As only the minority of public Slovakian listed entities use IFRS, it suggests that users of financial statements are not fully aware of the reporting location of OCI and CI. In addition, the contracting theory suggests that managers should not be held responsible for earnings components over which they have little control (Lambert, 2001). Traditional theories of contracting incentives cannot explain the reporting location choice of comprehensive income, that is whether comprehensive income is reported in the statement of income or statement of changes in equity, because values of profit or loss, other comprehensive income and comprehensive income are exactly the same (Bamber et al., 2010, p. 97). However, it may explain why the majority of Slovakian listed entities choose to prepare consolidated financial statements in accordance with SAR over IFRS. As the statement of income prepared under SAR ends with PL figure and the statement of comprehensive income presents CI in the end, these two presentation formats clearly put the emphasis on different amounts (PL versus CI). Graham et al. (2005) suggest that higher perceived volatility of firm performance, inherent in comprehensive income amount, could damage the firm's stock price and assessment of the manager's own performance.

In the incremental value relevance analysis, we find evidence that aggregate OCI is value-relevant in the group of SAR companies and not in the group of IFRS companies.

Based on these results, we accept [H3] and conclude that aggregate OCI recognised in financial statements of Slovakian listed entities, prepared according to SAR, adds relevant information to the ones disclosed in profit or loss and book value. However, we reject [H4] and conclude that aggregate OCI recognised in financial statements of Slovakian listed entities, prepared according to IFRS, does not add value-relevant information to the ones disclosed in profit or loss and book value.

We further provide evidence that the three OCI elements, revaluation surplus, foreign currency translation adjustment and unrealized gains and losses on available-for-sale securities, are value-relevant in explaining stock returns for the group of IFRS companies. This result is in line with Chambers et al. (2007) that find foreign currency translation adjustment and unrealized gains and losses on available-for-sale securities to be priced by investors in the post-SFAS 130 period. Similar to our research design, Chambers et al. (2007) also use as-reported data to conduct the value relevance analyses. This result suggests that disaggregation of OCI components in the statement of comprehensive income facilitates the investor's decision-making process as opposed to OCI aggregation by improving the reporting transparency. This result is also in line with Hirst and Hopkins (1998) conclusion that investors pay greatest attention to items reported in the expected location. Under SAR, Forex and Unreal are reported as part of the statement of income.

6 Findings

The concluding chapter of this dissertation presents the key findings of this study and is divided into three sections. The first section presents the main findings and answers the research questions outlined in Chapter 1, section two discusses the limitations of this study, and section three concludes the dissertation.

6.1 Key findings

This study provides empirical evidence on the value relevance of different income measures by analysing the association between PL, OCI and CI with the market value of equity. Using the relative value relevance analysis, we provide evidence that PL is more value-relevant than CI in Slovakia. Using the incremental value relevance analysis, we find that the three components of OCI, revaluation surplus, foreign currency translation adjustment and unrealized gains and losses on available-for-sale securities, provide additional value-relevant information in explaining the stock returns when added separately to PL in the group companies following IFRS standards. Our findings further suggest, that differences in value relevance exist between the IFRS group and SAR group of companies. The aggregate OCI is found to be value-relevant only in the group of companies following SAR standards.

Based on the results of this study, PL remains a better measure of firm performance than CI in Slovakia. Therefore, more extensive IFRS adoption in Slovakia does not appear to be justified by an effort to provide better performance measurement tool for investors. Importantly, we do not stipulate that IFRS adoption may have not improved other aspects of financial reporting in Slovakia.

Table 6.1 presents the summary of the results of the value relevance analyses of this study.

Table 6.1: Summary of results from value relevance analyses

	Price-levels model		*Return model*
Variable	As-reported	As-if	
PL	++	0	++
CI	++	+	0
BV	++	++	no value
OCI	0	+	++
Reval	0	0	++
Forex	0	0	++
Unreal	0	0	++
IFRS	no value	no value	- -

Source: Compiled by the author.

++ statistical significant positive association (1%);

+ statistical significant positive association (5%);

- - statistical significant negative association (1%);

0 no statistical significant impact;

no value – not included in the model.

6.2 Limitations of this study

There are two major limitations of this study. The first is the assumption of the existence of efficient market in Slovakia. As mentioned earlier, it is not the purpose of this study to examine the market efficiency in Slovakia; however, it was essential to assume that at least semi-efficient market holds in order for quantitative research design to generate reliable findings. A possible remedy to this limitation is the introduction of qualitative exploration of CI value relevance in addition to quantitative enquiry. Although, to the best of our knowledge, all studies investigating CI value relevance adopt positivist approach, there is an increasing number of studies in the accounting field that implement an alternative methodology emphasizing interpretation rather than explanation or prediction when studying the phenomena. Furthermore, qualitative enquiry would enable exploration of the individual behavioural traits of investors with regards to comprehensive income reporting. In other words, the qualitative approach would provide more detail on how general investors perceive, understand and interpret comprehensive income in Slovakia.

Another limitation of this study is the size of the sample of companies using IFRS standards to report comprehensive income in the consolidated financial statements. As the majority of Slovakian listed entities use SAR to prepare consolidated financial statements, the full sample consists of approximately 80 per cent of companies using these accounting regulations. However, the imbalance in sample consistency could not be improved as the majority of Slovakian listed entities remain to use SAR to prepare their consolidated financial statements despite all public EU listed entities are required to prepare those in accordance with IFRS. This observation can be investigated in any future research interested in determining why Slovakian or other EU listed entities do not follow IFRS, and what implications this may have on their overall performance or investors' attractiveness.

6.3 Conclusion

This study investigated the value relevance of profit or loss, comprehensive income, other comprehensive income and its components in the Slovak Republic. Two most predominant methods used in the existing literature for assessing the value relevance of accounting amounts were adopted in this study. To examine relative value relevance of profit or loss and comprehensive income, and incremental value relevance of aggregate other comprehensive income and the individual items of other comprehensive income, price-levels and return models were adopted from Goncharov and Hodgson (2011).

The key finding regarding the relative value relevance is that, profit or loss is more value-relevant than comprehensive income in both groups of companies, IFRS and SAR. In addition, we provide evidence on difference between value relevance of aggregate OCI between the two groups. Aggregate OCI provide value-relevant information in addition to PL and BV in the group of SAR companies; however, aggregate OCI does not provide value-relevant information in addition to those already disclosed in PL and BV in the group of IFRS companies.

We conclude that comprehensive income reporting in Slovakia does not improve the transparency of financial reporting. These results may be of interest for standard setters, as they provide evidence that OCI items are not value-relevant in Slovakia, EU country recently transitioned, as opposed to the majority of research using the sample of various EU countries.

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Appendices

Appendix A: Summary of previous empirical studies

Author(s)	Country	Sample Size	Time Period	Dependent Variable(s)	Income Measure(s)	Key Findings
Cheng et al. (1993)	USA	922 firms; 16,604 observations	1972 – 1989	• Abnormal returns	• Operating income • NI • CI	Operating income dominates both NI and CI.
O'Hanlon and Pope (1999)	UK	158 firms	1972 – 1992	• Cumulative stock returns	• Ordinary profit • Dirty surplus flows (goodwill, asset revaluation, foreign currency translation, extraordinary items)	Ordinary profit is value relevant. No dirty surplus flow found to be value relevant, except extraordinary items.

Author(s)	Country	Sample Size	Time Period	Dependent Variable(s)	Income Measure(s)	Key Findings
Dhaliwal et al. (1999)	USA	11,425 observations	1994 – 1995	• Raw daily percentage returns • Future cash flows	• NI • CI_{130} • OCI_{130}	NI is better measure of firm performance than CI_{130}. Marketable securities adjustment found to improve association between income and returns.
Biddle and Choi (2006)	USA	23,427 observations	1994 – 1998	• Abnormal returns • Executive compensation	• 16 income definitions (combinations of NI and OCI elements)	CI_{130} dominates both NI and CI in explaining returns. NI better in explaining executive compensation.
Chambers et al. (2007)	USA	S&P 500 firms	1994 – 1997 & 1998 – 2003	• Buy-and-hold raw return	• OCI in pre- and post-SFAS 130 period	OCI priced on dollar-for-dollar basis in post-SFAS period. Foreign currency translation and unrealized gains/losses on available-for-sale securities priced positively.

Author(s)	Country	Sample Size	Time Period	Dependent Variable(s)	Income Measure(s)	Key Findings
Casta et al. (2008)	Germany France Spain Italy UK	733 observations	1992 – 2004	• Average cumulative share returns	• NI, aggregate OCI and CI	CI less value relevant than NI; aggregate OCI provides incremental price-relevant information.
Kanagaretnam et al. (2009)	USA & Canada	75 firms; 228 observations	1998 – 2003	• Price per share • Stock returns • Future cash flows	• NI, CI & OCI components (foreign currency translation, change in fair value of available-for-sale securities and cash flow hedges)	CI is strongly associated with stock price and returns compared to NI, yet NI is better predictor of future cash flows. Change in fair value of available-for-sale securities is positively related to stock returns and stock price.

Author(s)	Country	Sample Size	Time Period	Dependent Variable(s)	Income Measure(s)	Key Findings
Goncharov and Hodgson (2011)	16 EU countries	No of observations: 56,702 in conservatism 56,696 in value relevance 29,489 in FCF	1991 – 2005	• Cumulative-dividend raw stock returns • Share price • Future cash flow • Revision in analysts' mean target estimate of price per share	• NI, CI and components of OCI (revaluation reserve, foreign currency translation, unrealized held-for-sale security gains/losses)	NI dominates aggregated CI as a decision-relevant metric.
Fasan et al. (2011)	19 EU countries	18,069 observations	1995 – 2010	• Raw share returns	• Aggregate OCI	OCI found to be incrementally value relevant in post-IAS 1-revised adoption period.

Author(s)	Country	Sample Size	Time Period	Dependent Variable(s)	Income Measure(s)	Key Findings
Cahan et al. (2000)	48 New Zealand firms	237 observations	1992 – 1997	• Share price	• Asset revaluation (AR) • Currency translation adjustment (CTA)	CI is more value relevant than NI. AR & CTA do not have incremental value relevance beyond comprehensive income
Mechelli and Cimini (2014)	15 EU countries	3,377 firms; 16,511 observations	2006 – 2008 2009 – 2011	• Price per share • 12-month actual returns	• NI, CI and aggregate OCI	NI is more value-relevant than CI for both models. Aggregate OCI is incrementally value-relevant; adding useful information to book value and NI.

Source: Compiled by the author from various research papers.

Appendix B: Research ethics approval

Human Research Ethics Committee (HREC)

From Duncan Banks, Deputy Chair
The Open University Human Research Ethics Committee
Email duncan.banks@open.ac.uk
Extension (6) 59198

To Dušan Andrejcik, FBL

Project title Does the reporting of profit or loss, OCI and comprehensive income reduce earnings management and improve investors' decisions?
HREC ref HREC/2016/2312/Andrejcik/1

AMS ref

Memorandum

Date application submitted: 20/05/16
Date of HREC response : 14/06/16

This memorandum is to confirm that the research protocol for the above-named research project, as submitted to the OU HREC for ethics review, has been given a favourable opinion by Chair's action.

Please note the following:

1. You are responsible for notifying the HREC immediately of any information received by you, or of which you become aware which would cast doubt on, or alter, any information contained in the original application, or a later amendment which would raise questions about the safety and/or continued conduct of the research.

2. It is essential that any proposed amendments to the research are sent to the HREC for review, so they can be recorded and a favourable opinion given prior to any changes being implemented (except only in cases of emergency when the welfare of the participant or researcher is or may be effected).

3. You are authorised to present this memorandum to outside bodies such as NHS Research Ethics Committees in support of any application for future research clearance. Also, where there is an external ethics review, a copy of the application and outcome should be sent to the HREC.

4. OU research ethics review procedures are fully compliant with the majority of grant awarding bodies and where they exist, their frameworks for research ethics.

5. At the conclusion of your project, by the date you have stated in your application, you are required to provide the Committee with a final report to reflect how the project has progressed, and importantly whether any ethics issues arose and how they were dealt with. A copy of the final report template can be found on the research ethics website - http://www.open.ac.uk/research/ethics/human-research/human-research-ethics-full-review-process-and-proforma#final_report

Best regards,

Dr Duncan Banks, Deputy Chair

The Open University Human Research Ethics Committee

http://www.open.ac.uk/research/ethics/

Appendix C: List of companies

	Using IFRS	Using SAR
1	Slovnaft, a.s.	CRH (Slovensko), a.s.
2	Doprastav, a.s.	Syráreň BEL Slovensko, a.s.
3	Zentiva, a.s.	Rona, a.s.
4	Tatry mountain resorts, a.s.	Biotika, a.s.
5	Asseco Central Europe, a. s.	Cemmac, a.s.
6	Chemolak, a.s.	Milsy, a.s.
7	Plastika, a.s.	Osivo, a.s.
8	Best Hotel Properties, a.s.	Slovenské liečebné kúpele Turčianske Teplice, a.s.
9	Druhá strategická, a.s.	Vipo a. s.
10	Prvá strategická, a.s.	ZTS Sabinov, a. s.
11		Zlieváreň SEZ Krompachy, a.s.
12		ZTS Výskumno-vývojový ústav Košice, a.s.
13		Stapring, a.s.
14		1. garantovaná, a.s.
15		PRO Populo PP, a.s.
16		Poľnonákup Šariš, a.s.
17		Vodomont-Vodohospodárske Stavby, a.s. Vodomont-VS, a.s.
18		DOLKAMŠuja, a.s.
19		Kúpele Nový Smokovec, a.s.
20		Ekostav, a.s.
21		Poľnonákup Turiec, a.s.

	Using SAR
22	Mraziarne, a.s. Sládkovičovo
23	Hydromeliorácie, a.s.
24	Vunar, a.s.
25	Potravinoprojekt, a.s.
26	ZTS Inmart, a.s.
27	Progres - Pozemné stavby, a.s.
28	Majetkový Holding, a.s.
29	Real ZA, a.s.
30	Cheminvest, a.s.
31	Cestné stavby, a.s.
32	Geocomplex, a.s.
33	Slovfood, a.s.
34	Želing, a.s.
35	Frigo, a.s.
36	Tatranská teplárenská, a.s.

Appendix D: Raw data

ID	Year	PL	Reval	Forex	Unreal	OCI	CI	BV
1. garantovaná, a.s.	2012	-1350137	-2608438	-1149	0	-1848375	-3198512	16155880.81
1. garantovaná, a.s.	2013	-1120239	534619	-433	0	534186	-586053	12957274.51
1. garantovaná, a.s.	2014	-9755917	-269647	-1148	0	-270795	-10026712	12371320.42
Asseco Central Europe, a. s.	2012	14401000	0	2589000	0	2589000	16990000	101525571.5
Asseco Central Europe, a. s.	2013	11151000	0	-3552000	0	-3552000	7599000	99732978.34
Asseco Central Europe, a. s.	2014	11873000	0	-936000	0	-936000	10937000	103548858.7
Best Hotel Properties, a.s.	2012	-44736000	66127000	3928000	0	70055000	25319000	360731428.8
Best Hotel Properties, a.s.	2013	-1482000	0	-19613000	0	-19613000	-21095000	346292175
Best Hotel Properties, a.s.	2014	-3467000	0	-57250000	0	-57250000	-60717000	351195675
Biotika, a.s.	2012	4190295	321848	-13438	0	542313	4732608	32901062.2
Biotika, a.s.	2013	6766678	64320	-1064	47311	-2985228	3781450	37399555.45
Biotika, a.s.	2014	3390889	59730	1015	52721	-8711890	-5321001	41026875.2
Cemmac, a.s.	2012	244910	0	2417	0	-976961	-732051	25408742.69

ID	Year	PL	Reval	Forex	Unreal	OCI	CI	BV
Cemmac, a.s.	2013	1789902	0	-56253	0	-2078670	-288768	24677032.1
Cemmac, a.s.	2014	2329277	0	-23092	0	-1521109	808168	24681430.06
Cestné stavby, a.s.	2012	-127,849	0	0	0	-399	-128,248	923207.1
Cestné stavby, a.s.	2013	-58,067	0	0	0	1,042	-57,025	795354.15
Cestné stavby, a.s.	2014	-23,629	0	0	0	-755	-24,384	737279.85
Cheminvest, a.s.	2012	29500	0	0	0	-1536	27964	708760.686
Cheminvest, a.s.	2013	34051	0	0	0	-9933	24118	734367.138
Cheminvest, a.s.	2014	11076	0	0	0	-7437	3639	758097.112
Chemolak, a.s.	2012	-141288	0	50257	-10217	40040	-101248	17165938.02
Chemolak, a.s.	2013	-237590	0	-144666	-578977	-723643	-961233	17670066.12
Chemolak, a.s.	2014	-1026816	0	1359671	-282832	1076839	50023	17319433.74
CRH (Slovensko), a.s.	2012	9300830	-5274556	-38318	0	-10914810	-1613980	75610520
CRH (Slovensko), a.s.	2013	-21942818	-1712071	-84128	0	-461751	-22404569	73996520

ID	Year	PL	Reval	Forex	Unreal	OCI	CI	BV
CRH (Slovensko), a.s.	2014	-1481944	-2534489	-313649	0	237015933	235533989	50225927.08
DOLKAMŠuja, a.s.	2012	515265	0	-7326	0	121254	636519	6800327.582
DOLKAMŠuja, a.s.	2013	159391	0	-17861	0	-30725	128666	7270259.731
DOLKAMŠuja, a.s.	2014	104421	0	-9283	0	-24691	79730	7399799.736
Doprastav, a.s.	2012	-49155000	0	0	0	0	-49155000	101001600
Doprastav, a.s.	2013	-60296000	0	0	0	0	-60296000	53759211.2
Doprastav, a.s.	2014	37037000	0	0	0	0	37037000	-6812034.264
Druhá strategická, a.s.	2012	-15212567	-29471	0	0	-29471	-15242038	47936372.94
Druhá strategická, a.s.	2013	-15483155	414636	0	0	414636	-15068519	37295118.23
Druhá strategická, a.s.	2014	-38037177	0	0	0	0	-38037177	26314603.02
Ekostav, a.s.	2012	75115	-57734	0	0	-60101	15014	2085969.617
Ekostav, a.s.	2013	-615870	-67038	0	0	-68643	-684513	2103327.563
Ekostav, a.s.	2014	-259996	-117027	0	0	-91673	-351669	1420397.028

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Frigo, a.s.	2012	21826	139879	0	0	139878	161704	3076679.136
Frigo, a.s.	2013	-1598380	1327193	0	0	1327194	-271186	3238514.976
Frigo, a.s.	2014	24203	-391817	0	0	-391817	-367614	2967215.172
Geocomplex, a.s.	2012	-105427	293211	0	0	293210	187783	3050499.65
Geocomplex, a.s.	2013	-2444	-177370	-3	0	-177373	-179817	3238291.65
Geocomplex, a.s.	2014	-116118	56380	0	0	56381	-59737	3058448.8
Hydromeliorácie, a.s.	2012	2747	0	0	0	-10499	-7752	1117201.743
Hydromeliorácie, a.s.	2013	-95853	0	0	0	-502	-96355	1119442.275
Hydromeliorácie, a.s.	2014	-87511	0	-4	0	-4	-87515	1023099.399
Kúpele Nový Smokovec, a.s.	2012	54345	0	-88	0	-27950	26395	2030977.12
Kúpele Nový Smokovec, a.s.	2013	53360	0	-71	0	-27897	25463	2092526.4
Kúpele Nový Smokovec, a.s.	2014	55816	0	-722	0	751520	807336	2145799.52
Majetkový Holding, a.s.	2012	1319507	12083	107644	526505	-541128	778379	39447066.18

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Majetkový Holding, a.s.	2013	1204230	382008	-590464	100590	-2182422	-978192	40225519.32
Majetkový Holding, a.s.	2014	1368129	4469	79233	616324	171587	1539716	39238437.9
Milsy, a.s.	2012	-478232	0	-5409	0	-258795	-737027	3155749.1
Milsy, a.s.	2013	-404718	0	-46222	0	-468105	-872823	2418902.885
Milsy, a.s.	2014	-2145457	0	-20131	0	-20286	-2165743	1545988.245
Mraziarne, a.s. Sládkovičovo	2012	-412468	0	-216	0	104772	-307696	3742864.735
Mraziarne, a.s. Sládkovičovo	2013	-562711	0	-105	0	-73115	-635826	3330158.79
Mraziarne, a.s. Sládkovičovo	2014	-642093	0	60	0	-33870	-675963	2767356.535
Osivo, a.s.	2012	-1598146	1329488	-69	0	954316	-643830	2790470.85
Osivo, a.s.	2013	-548684	-135247	2517	0	-316884	-865568	2493882.465
Osivo, a.s.	2014	-514795	4006	-988	0	-148034	-662829	1812260.7
Plastika, a.s.	2012	-4226000	0	-323000	0	-323000	-4549000	1134724.5
Plastika, a.s.	2013	-4515000	0	-320000	0	-320000	-4835000	-1846178.75

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Plastika, a.s.	2014	-3298000	0	-228000	0	-228000	-3526000	-6869309
Poľnonákup Šariš, a.s.	2012	16688	467537	-22	0	467515	484203	2823073.182
Poľnonákup Šariš, a.s.	2013	39351	-42122	10	0	-42112	-2761	3307326.42
Poľnonákup Šariš, a.s.	2014	61130	-98499	-15	0	517420	578550	3304483.446
Poľnonákup Turiec, a.s.	2012	-36219	0	0	0	-49703	-85922	1970143.074
Poľnonákup Turiec, a.s.	2013	-243690	0	0	0	-181794	-425484	2178000
Poľnonákup Turiec, a.s.	2014	-53111	0	0	0	250138	197027	1569553.335
Potravinoprojekt, a.s.	2012	-60557	0	0	0	-11553	-72110	750059.38
Potravinoprojekt, a.s.	2013	42333	0	-1	0	-44551	-2218	677937.526
Potravinoprojekt, a.s.	2014	19178	0	0	0	-1566	17612	675725.078
PRO Populo PP, a.s.	2012	-459817	0	0	0	100	-459717	3418360.64
PRO Populo PP, a.s.	2013	-167519	0	-2	0	-8569	-176088	2958526.08
PRO Populo PP, a.s.	2014	-167710	0	0	0	-7000	-174710	2782544.96

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Progres - Pozemné stavby, a.s.	2012	-35907	0	0	0	-7101	-43008	283937.091
Progres - Pozemné stavby, a.s.	2013	-45880	0	0	0	26284	-19596	248034.007
Progres - Pozemné stavby, a.s.	2014	87617	0	0	0	-5020	82597	221482.693
Prvá strategická, a.s.	2012	-271470	0	50257	-10217	40040	-231430	12605633.79
Prvá strategická, a.s.	2013	-241485	0	-144666	-578977	-723643	-965128	12563961.18
Prvá strategická, a.s.	2014	-967904	0	1359671	-282832	1076839	108935	12329139.33
Real ZA, a.s.	2012	-47994	0	0	0	0	-47994	1124760
Real ZA, a.s.	2013	-19202	0	0	0	0	-19202	1076920
Real ZA, a.s.	2014	-32878	0	0	0	-40165	-73043	1062006.315
Rona, a.s.	2012	710735	-458221	-16629	0	-554185	156550	12807057.1

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Rona, a.s.	2013	1214864	-69171	-140096	0	-807763	407101	12913825.76
Rona, a.s.	2014	2822997	-126962	74208	0	-1302046	1520951	13534742.57
Slovenské liečebné kúpele Turčianske Teplice, a.s.	2012	140521	0	-9577	0	-89839	50682	7395457.65
Slovenské liečebné kúpele Turčianske Teplice, a.s.	2013	165038	0	-10720	0	-27727	137311	7526573.46
Slovenské liečebné kúpele Turčianske Teplice, a.s.	2014	275198	0	-2498	0	-84954	190244	7680982.05
Slovfood, a.s.	2012	-1493650	0	0	0	0	-1493650	9101541.348
Slovfood, a.s.	2013	-127059	0	0	0	56740	-70319	7607968.416
Slovfood, a.s.	2014	165338	0	0	0	-1	165337	7537544.91
Slovnaft, a.s.	2012	52617000	0	-940000	0	-940000	51677000	1405021933
Slovnaft, a.s.	2013	35105000	0	696000	0	601000	35706000	1484443889

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Slovnaft, a.s.	2014	-70697000	0	-1068000	0	-3041000	-73738000	1329300454
Stapring, a.s.	2012	-550656	0	-16	0	-955	-551611	3238416.108
Stapring, a.s.	2013	107631	0	0	0	2135551	2243182	2687698.272
Stapring, a.s.	2014	-35255	0	-1	0	78081	42826	4931039.649
Syráreň BEL Slovensko, a.s.	2012	2284278	0	-3198	0	591716	2875994	40873997.45
Syráreň BEL Slovensko, a.s.	2013	2204267	0	-234	0	-61641	2142626	43752611.8
Syráreň BEL Slovensko, a.s.	2014	2337410	0	-1045	0	-2005284	332126	45956601.29
Tatranská teplárenská, a.s.	2012	-74167	0	0	0	-1	-74168	2387319.343
Tatranská teplárenská, a.s.	2013	-207646	0	0	0	0	-207646	2313072.72
Tatranská teplárenská, a.s.	2014	-3122795	0	0	0	497930	-2624865	2105477.503
Tatry mountain resorts, a.s.	2012	10186000	0	0	-17000	-17000	10169000	265725770.4
Tatry mountain resorts, a.s.	2013	6604000	15000	0	6000	21000	6625000	265933693.5
Tatry mountain resorts, a.s.	2014	683000	0	-119000	0	-119000	564000	89474021.32

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Vipo a. s.	2012	294945	-365	-1524	0	-59623	235322	3693148.688
Vipo a. s.	2013	314570	-755	-6702	0	4475	319045	3951214.144
Vipo a. s.	2014	449698	-91	389	0	-48368	401330	4225287.176
Vodomont-Vodohospodárske Stavby, a.s. Vodomont-VS, a.s.	2012	-482281	21162	2804	0	5096	-477185	1570608.141
Vodomont-Vodohospodárske Stavby, a.s. Vodomont-VS, a.s.	2013	-1089018	0	-4130	0	-4130	-1093148	1106672.394
Vodomont-Vodohospodárske Stavby, a.s. Vodomont-VS, a.s.	2014	-25409	-47494	1747	0	-8229	-33638	13532.774
Vunar, a.s.	2012	59927	-5976	0	0	-58786	1141	-39590
Vunar, a.s.	2013	116904	2988	0	0	84166	201070	-38303.494

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Vunar, a.s.	2014	-36210	0	0	0	0	-36210	190875.512
Želing, a.s.	2012	-22397	0	0	0	-6	-22403	1158007.288
Želing, a.s.	2013	-25541	0	0	0	0	-25541	1135608.592
Želing, a.s.	2014	-14020	0	0	0	26538	12518	1110059.252
Zentiva, a.s.	2012	70208000	0	0	0	-147000	70061000	206797491.1
Zentiva, a.s.	2013	52258000	0	0	0	133000	52391000	164392859.5
Zentiva, a.s.	2014	35995000	0	0	0	-10000	35985000	146215292.1
Zlieváreň SEZ Krompachy, a.s.	2012	1709	0	-4	0	-5019	-3310	1155649.643
Zlieváreň SEZ Krompachy, a.s.	2013	2052	0	-8	0	-9	2043	1152331.93
Zlieváreň SEZ Krompachy, a.s.	2014	2630	0	-222	0	-222	2408	1154380.656

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ZTS Inmart, a.s.	2012	-14787	0	0	0	1463750	1448963	294241.44
ZTS Inmart, a.s.	2013	45626	0	0	0	-276001	-230375	274533.68
ZTS Inmart, a.s.	2014	114158	0	0	0	-454710	-340552	320159.436
ZTS Sabinov, a. s.	2012	-288635	0	-17717	0	-46046	-334681	9077105.13
ZTS Sabinov, a. s.	2013	-462007	0	-9484	0	-27539	-489546	8767766.484
ZTS Sabinov, a. s.	2014	207753	0	13978	0	-20901	186852	8301553.926
ZTS Výskumno-vývojový ústav Košice, a.s.	2012	116014	0	-593	0	-19816	96198	2148798.6
ZTS Výskumno-vývojový ústav Košice, a.s.	2013	100363	0	-963	0	80304	180667	2247623.55
ZTS Výskumno-vývojový ústav Košice, a.s.	2014	1630	0	25	0	-109976	-108346	2330407.05